PERTANIKA JOURNAL OF SOCIAL SCIENCES & HUMANITIES

About the Journal

Overview

Pertanika Journal of Social Sciences & Humanities is the official journal of Universiti Putra Malaysia. It is an open-access online scientific journal. It publishes original scientific outputs. It neither accepts nor commissions third party content.

Recognised internationally as the leading peer-reviewed interdisciplinary journal devoted to the publication of original papers, it serves as a forum for practical approaches to improve quality in issues pertaining to social and behavioural sciences as well as the humanities.

Pertanika Journal of Social Sciences & Humanities currently publishes 6 issues a year (*March*, *April*, *June*, *September, October* and *December*) periodical that considers for publication original articles as per its scope. The journal publishes in **English** as well as in **Bahasa Malaysia** and it is open for submission by authors from all over the world.

The journal is available world-wide.

Aims and scope

Pertanika Journal of Social Sciences & Humanities aims to develop as a pioneer journal for the social sciences with a focus on emerging issues pertaining to the social and behavioural sciences as well as the humanities. Areas relevant to the scope of the journal include Social Sciences—architecture and habitat, consumer and family economics, consumer law, education, media and communication studies, political sciences and public policy, population studies, psychology, sociology, and tourism; Humanities—arts and culture, dance, language and linguistics, literature, music, philosophy, and sports.

History

Pertanika Journal of Social Sciences & Humanities was founded in 1993 and focuses on research in social and behavioural sciences as well as the humanities and its related fields.

Vision

To publish journal of international repute.

Mission

Our goal is to bring the highest quality research to the widest possible audience.

Quality

We aim for excellence, sustained by a responsible and professional approach to journal publishing. Submissions can expect to receive a decision within 120 days. The elapsed time from submission to publication for the articles averages 180 days. We are working towards decreasing the processing time with the help of our editors and the reviewers.

Abstracting and indexing of Pertanika

Pertanika Journal of Social Sciences & Humanities is now over 32 years old; this accumulated knowledge and experience has resulted the journal being abstracted and indexed in SCOPUS (Elsevier), Clarivate Web of Science (ESCI), EBSCO, DOAJ, Agricola, ASEAN CITATION INDEX, ISC, Microsoft Academic, Google Scholar, and MyCite.

Citing journal articles

The abbreviation for Pertanika Journal of Social Sciences & Humanities is *Pertanika J. Soc. Sci. & Hum.*

Publication policy

Pertanika policy prohibits an author from submitting the same manuscript for concurrent consideration by two or more publications. It prohibits as well publication of any manuscript that has already been published either in whole or substantial part elsewhere. It also does not permit publication of manuscript that has been published in full in proceedings.

Code of ethics

The *Pertanika* journals and Universiti Putra Malaysia take seriously the responsibility of all of its journal publications to reflect the highest publication ethics. Thus, all journals and journal editors are expected to abide by the journal's codes of ethics. Refer to *Pertanika*'s **Code of Ethics** for full details, or visit the journal's web link at: http://www.pertanika.upm.edu.my/code_of_ethics.php

Originality

The author must ensure that when a manuscript is submitted to *Pertanika*, the manuscript must be an original work. The author should check the manuscript for any possible plagiarism using any program such as Turn-It-In or any other software before submitting the manuscripts to the *Pertanika* Editorial Office, Journal Division.

All submitted manuscripts must be in the journal's acceptable **similarity index range**:
≤ 20% – PASS; > 20% – REJECT.

International Standard Serial Number (ISSN)

An ISSN is an 8-digit code used to identify periodicals such as journals of all kinds and on all media–print and electronic.

Pertanika Journal of Social Sciences and Humanities: e-ISSN 2231-8534 (Online).

Lag time

A decision on acceptance or rejection of a manuscript is reached in 120 days (average). The elapsed time from submission to publication for the articles averages 180 days.

Authorship

Authors are not permitted to add or remove any names from the authorship provided at the time of initial submission without the consent of the journal's Chief Executive Editor.

Manuscript preparation

Most scientific papers are prepared according to a format called IMRAD. The term represents the first letters of the words *Introduction*, *Materials and Methods*, *Results*, *And Discussion*. IMRAD is simply a more 'defined' version of the "IBC" (*Introduction*, *Body*, *Conclusion*) format used for all academic writing. IMRAD indicates a pattern or format rather than a complete list of headings or components of research papers; the missing parts of a paper are: *Title*, *Authors*, *Keywords*, *Abstract*, *Conclusions*, *References*, and *Acknowledgement*. Additionally, some papers include *Appendices*. For manuscripts in **Bahasa Malaysia**, the title, abstract and keywords should be written in both **English** and **Bahasa Malaysia**.

The *Introduction* explains the scope and objective of the study in the light of current knowledge on the subject; the *Materials and Methods* describes how the study was conducted; the *Results* section reports what was found in the study; and the *Discussion* section explains meaning and significance of the results and provides suggestions for future directions of research. The manuscript must be prepared according to the journal's **Instruction to Authors** (http://www.pertanika.upm.edu.my/Resources/regular_issues/Regular_Issues_Instructions_to_Authors.pdf).

Editorial process

Authors who complete any submission are notified with an acknowledgement containing a manuscript ID on receipt of a manuscript, and upon the editorial decision regarding publication.

Pertanika follows a **double-blind peer -review process**. Manuscripts deemed suitable for publication are sent to reviewers. Authors are encouraged to suggest names of at least 3 potential reviewers at the time of submission of their manuscripts to *Pertanika*, but the editors will make the final selection and are not, however, bound by these suggestions.

Notification of the editorial decision is usually provided within 120 days from the receipt of manuscript. Publication of solicited manuscripts is not guaranteed. In most cases, manuscripts are accepted conditionally, pending an author's revision of the material.

As articles are double-blind reviewed, material that may identify authorship of the paper should be placed only on page 2 as described in the first-4-page format in Pertanika's Instruction to Authors (http://www.pertanika.upm.edu.my/Resources/regular_issues/Regular_Issues_Instructions_to_Authors.pdf).

The journal's peer review

In the peer review process, 2 or 3 referees independently evaluate the scientific quality of the submitted manuscripts. At least 2 referee reports are required to help make a decision.

Peer reviewers are experts chosen by journal editors to provide written assessment of the **strengths** and **weaknesses** of written research, with the aim of improving the reporting of research and identifying the most appropriate and highest quality material for the journal.

Operating and review process

What happens to a manuscript once it is submitted to *Pertanika*? Typically, there are 7 steps to the editorial review process:

1. The journal's Chief Executive Editor and the Editor-in-Chief examine the paper to determine whether it is relevance to journal needs in terms of novelty, impact, design, procedure, language as well as presentation and allow it to proceed to the reviewing process. If not appropriate, the manuscript is rejected outright and the author is informed.

2. The Chief Executive Editor sends the article-identifying information having been removed, to 2 to 3 reviewers. They are specialists in the subject matter of the article. The Chief Executive Editor requests that they complete the review within 3 weeks.

    Comments to authors are about the appropriateness and adequacy of the theoretical or conceptual framework, literature review, method, results and discussion, and conclusions. Reviewers often include suggestions for strengthening of the manuscript. Comments to the editor are in the nature of the significance of the work and its potential contribution to the research field.

3. The Editor-in-Chief examines the review reports and decides whether to accept or reject the manuscript, invite the authors to revise and resubmit the manuscript, or seek additional review reports. In rare instances, the manuscript is accepted with almost no revision. Almost without exception, reviewers' comments (to the authors) are forwarded to the

authors. If a revision is indicated, the editor provides guidelines to the authors for attending to the reviewers' suggestions and perhaps additional advice about revising the manuscript.

4. The authors decide whether and how to address the reviewers' comments and criticisms and the editor's concerns. The authors return a revised version of the paper to the Chief Executive Editor along with specific information describing how they have addressed the concerns of the reviewers and the editor, usually in a tabular form. The authors may also submit a rebuttal if there is a need especially when the authors disagree with certain comments provided by reviewers.

5. The Chief Executive Editor sends the revised manuscript out for re-review. Typically, at least 1 of the original reviewers will be asked to examine the article.

6. When the reviewers have completed their work, the Editor-in-Chief examines their comments and decides whether the manuscript is ready to be published, needs another round of revisions, or should be rejected. If the decision is to accept, the Chief Executive Editor is notified.

7. The Chief Executive Editor reserves the final right to accept or reject any material for publication, if the processing of a particular manuscript is deemed not to be in compliance with the S.O.P. of *Pertanika*. An acceptance notification is sent to all the authors.

8. The editorial office ensures that the manuscript adheres to the correct style (in-text citations, the reference list, and tables are typical areas of concern, clarity, and grammar). The authors are asked to respond to any minor queries by the editorial office. Following these corrections, page proofs are mailed to the corresponding authors for their final approval. At this point, **only essential changes are accepted**. Finally, the manuscript appears in the pages of the journal and is posted on-line.

ABSTRACTING AND INDEXING OF PERTANIKA JOURNALS

The journal is indexed in Journal Citation Reports (JCR, Clarivate), SCOPUS (Elsevier), BIOSIS, Google Scholar, MyCite and ISC. In addition, Pertanika JSSH is recipient of "CREAM" Award conferred by Ministry of Higher Education (MoHE), Malaysia.

Pertanika Journal of Social Sciences & Humanities
Vol. 33 (2) Apr. 2025
Contents

Selected papers from the Ethnic Minorities and Community Development
Guest Editor: Sarjit S. Gill and Puvaneswaran Kunasekaran

Foreword

Welcome to the second issue of 2025 for the Pertanika Journal of Social Sciences and Humanities (PJSSH)!

PJSSH is an open-access journal for studies in the field of Social Sciences and Humianities published by Universiti Putra Malaysia Press. It is independently owned and managed by the university for the benefit of the world-wide science community.

This issue contains 20 articles; two review articles; and the rest are regular articles. The authors of these articles come from different countries namely Australia, Bhutan, China, Indonesia, Malaysia, Saudi Arabia, Thailand, Turkey and Yemen.

A regular article titled "Teachers' Perceptions of Entrepreneurial Persuasive Communication Skills among Primary School Learners: A Needs Analysis" sought to examine the need for entrepreneurial persuasive communication (EPC) elements in primary schools in Malaysia from the practitioners' perspective. The results reveal the components of EPC in the current curriculum, elements of EPC that need to be addressed and teachers' daily practice in implementing the current curriculum. The detailed information of this article is presented on page 483.

An article entitled "ChatGPT and Education: Bhutanese Teachers' Knowledge, Perceptions, and Practices" explores the knowledge, perceptions, and practices of 214 Bhutanese in-service teachers regarding using ChatGPT in education. The overall findings of the current study indicate that teachers in the context were aware of ChatGPT and its potential impact on education. They recognised its positive and negative aspects. Despite these concerns, teachers held positive perceptions toward ChatGPT and reported using ChatGPT for various educational purposes. Further details of the study can be found on page 779.

Münevver Yildirim and Ufuk Şimşek investigated "The Use of Creative Comics and Cartoons in Social Studies Courses." The study focused on students in three different classrooms studying in the fifth grade of a secondary school affiliated with the Directorate of National Education in Erzurum. The study's findings present a statistical significance in favour of the experimental groups with respect to the average scores in the post-test. At the same time, there was no statistical significance between the experimental groups in which creative comics or cartoons were used. The detailed information of this article is presented on page 827.

We anticipate that you will find the evidence presented in this issue to be intriguing, thought-provoking and useful in reaching new milestones in your own research. Please recommend the journal to your colleagues and students to make this endeavour meaningful.

All the papers published in this edition underwent Pertanika's stringent peer-review process involving a minimum of two reviewers comprising internal as well as external referees. This was to ensure that the quality of the papers justified the high ranking of the journal, which is renowned as a heavily-cited journal not only by authors and researchers in Malaysia but by those in other countries around the world as well.

We would also like to express our gratitude to all the contributors, namely the authors, reviewers and Editorial Board Members of PJSSH, who have made this issue possible.

PJSSH is currently accepting manuscripts for upcoming issues based on original qualitative or quantitative research that opens new areas of inquiry and investigation.

Editor-in-Chief
Puvaneswaran Kunasekaran

Teachers' Perceptions of Entrepreneurial Persuasive Communication Skills Among Primary School Learners: A Needs Analysis

Ma Fei Fan[1], Norlidah Alias[1,2]* and Dorothy DeWitt[1]

[1]*Department of Curriculum and Instructional Technology, Faculty of Education, Universiti Malaya, 50603 Kuala Lumpur, Malaysia*
[2]*The Hub of Curriculum and Instructional Technologies Development (CiTED), Faculty of Education, Universiti Malaya, 50603 Kuala Lumpur, Malaysia*

ABSTRACT

Entrepreneurship is needed for sustainable economic development. However, entrepreneurship education seems to be focused on higher education, and there is a lack of studies at the primary school level. There seems to be a positive relationship between communication skills and entrepreneurial intention, so teaching persuasive communication entrepreneurship at primary schools should be considered. However, the components of entrepreneurship in the current primary school curriculum are unknown. Hence, this study investigates the need for entrepreneurial persuasive communication (EPC) elements in primary schools in Malaysia from the practitioners' perspective. The data was collected through semi-structured interviews with five experienced teachers in English and Design and Technology and content analysis of curriculum documents issued by the Ministry of Education. The data was analyzed through thematic analysis. The findings of this study reveal the components of EPC in the current curriculum, elements of EPC that need to be addressed and teachers' daily practice in implementing the current curriculum. The study also suggested a more systematic program or module for learning the EPC skills to address learners' lack of exposure to these skills.

Keywords: Entrepreneurship, needs analysis, persuasive communication

INTRODUCTION

Entrepreneurship education is traditionally perceived as providing learners with skills to set up new businesses (Rahim et al., 2015). As a result of the changes in Malaysian society due to the globalized economy, efforts to develop entrepreneurship are considered an investment to ensure the

country's sustainable economic development (S. Z. Ahmad & Buchanan, 2015). In line with this, equipping young people with entrepreneurial skills to be self-employed seems imperative, as it is difficult for the ever-increasing number of fresh graduates to secure employment in the job market (Rasiah et al., 2019). Hassan et al. (2020) asserted that an entrepreneurial attitude can be formed by having entrepreneurship education at all levels of education.

Looking at how entrepreneurship education has been implemented worldwide, Fellnhofer (2019) indicated that most entrepreneurship education studies were skewed toward higher education contexts, implying a lack of research in the primary school context. Talukder et al. (2024) further corroborated this finding, highlighting the literature's predominant emphasis on higher education despite noting the importance of entrepreneurship education in other contexts, such as elementary, secondary and vocational education. Furthermore, studies such as those conducted by Garrido-Yserte et al. (2020) and Yalap et al. (2020) showed a positive relationship between communication skills and entrepreneurial intention. Nevertheless, those studies did not investigate how communication skills for entrepreneurship can be taught, especially in primary school education.

In the context of Malaysian primary schools, entrepreneurship is not taught as a standalone subject. Following the Malaysia Education Blueprint 2013–2025 aspiration, entrepreneurship is taught as a cross-curricular element (CCE) embedded in other subjects (Ministry of Education Malaysia, 2016). do Paço and Palinhas (2011) advocated that entrepreneurship education should start at a young age. S. Z. Ahmad (2013) also suggested that the earlier entrepreneurial skills are taught, the earlier children will acquire skills needed for self-employment and job creation. Introducing entrepreneurship education at a young age may provide benefits as it may prepare young learners for the emerging economy and increase the chances of successful and sustainable entrepreneurship in the future (Studdard et al., 2013). As there is a concern about the implementation of entrepreneurship as a cross-curricular element in the Malaysian primary school curriculum (Abd Hamid, 2013; Mahmud et al., 2022), this study seeks to explore whether there is a need to introduce EPC skills for primary school learners by answering the following research questions:

1. What are the components of entrepreneurial persuasive communication in the current curriculum according to the perspective of the practitioners?
2. What elements of entrepreneurial persuasive communication are needed according to the perspective of the practitioners?

The EntreComp Framework

This study employs the EntreComp Framework proposed by Bacigalupo et al. (2016), a well-established theoretical

framework in entrepreneurship education. It contains finer descriptions of skills according to each area. The framework is also considered comprehensive as it has been reviewed by many stakeholders (Bacigalupo et al., 2016). Besides this, the EntreComp model helps schools promote the learning of entrepreneurial competencies by providing a globally accepted framework and definition of entrepreneurship (McCallum et al., 2018).

In the EntreComp framework, all the listed skills are described in the proficiency progression form, from the foundation level to the expert level, which provides a reference for developing entrepreneurial competencies. The progression of entrepreneurial learning is based on two principles: (1) developing independence and responsibility in acting upon ideas for value creation, and (2) developing the ability to make value from simple and predictable situations to complex and dynamic environments (Czyzewska & Mroczek, 2020). Categories of skills for each area are represented in Table 1.

The first area of skills, Ideas and Opportunities focuses on developing ideas and identifying opportunities for entrepreneurial pursuits. It consists of five competencies: (1) spotting opportunities, (2) creativity, (3) vision, (4) valuing ideas and (5) ethical and sustainable thinking. *Spotting opportunities* entails identifying opportunities for value-creating using one's imagination and abilities; *creativity* is defined as developing creative and purposeful ideas, which entails developing solutions to challenges, discovering and trying out

innovative approaches and synergizing knowledge and resources to attain desirable effects; *vision* is defined as the ability to work towards the vision of the future, *valuing ideas* is the competence of using ideas and opportunities to the best advantage, whereas *ethical and sustainable thinking* is the ability to evaluate the consequences and impact of ideas, opportunities and actions (Bacigalupo et al., 2016).

The second area of skills, Resources, deals with the ability to manipulate intrapersonal, interpersonal and external capital. *Self-awareness and self-efficacy* are the competence related to one's ability to believe in oneself in taking control of events despite risk, hindrances and momentary failures; *motivation and perseverance* means staying focused, determined, patient,

Table 1

The EntreComp framework

Area	Skills
Ideas and Opportunities	Spotting Opportunities
	Creativity
	Vision
	Valuing ideas
	Ethical and sustainable thinking
Resources	Self-awareness and self-efficacy
	Motivation and perseverance
	Mobilizing resources
	Financial and economic literacy
	Mobilizing others
Into Action	Taking the initiative
	Planning and management
	Coping with uncertainty, ambiguity and risk
	Working with others
	Learning through experience

resilient and trying to achieve goals; *mobilizing resources* refers to gathering and managing the resources one needs; *financial and economic literacy,* which deals with financial know-how, encompasses skills such as estimating the cost, planning and evaluating financial decisions and managing financing; *mobilizing others* means to motivate, enthuse and get others to be on board (Bacigalupo et al., 2016).

The third area of skills, Into Action, governs skills related to initiating processes, organizing, decision-making, collaborating and learning from experience. *Taking the initiative* is the ability to go for the opportunities that ones have; *planning and management* is the competence of prioritizing, organizing and following up the action plans that one has devised; *coping with uncertainty, ambiguity and risk* is related to the skill of making decisions in uncertain, ambiguous and risky situations as well as handling them in prompt and flexible manners; *working with others* includes skills such as working in collaboration to develop ideas, networking, resolving dissensions and taking competitions positively; *learning through experience* is related to how someone uses the initiatives for value creation, other people as well as success and failure as learning opportunities (Bacigalupo et al., 2016).

The EntreComp framework was devised through a stringent methodology. It went through a 12-step mixed-method development process that involved approximately 200 stakeholders during the consultation process (Bacigalupo et al., 2016). Therefore, the identified competencies in this framework have considerable reliability.

Of the 15 main skills listed in the Entrecomp framework, 'mobilizing others' is selected as it has the strongest relevance to communication skills. According to Bacigalupo et al. (2016), the skill of 'mobilizing others' consists of subskills such as (1) inspiring and getting inspired, (2) persuading, (3) communicating effectively, and (4) using media effectively. Further elaboration of these subskills with their eight levels of progress, as well as the suggestions for their application, are tabulated in Table 2.

The framework contains the progressive development of entrepreneurship skills that can be applied to all age groups. Thus, it has been used to map pupils' development levels regarding their acquisition of entrepreneurship skills. This framework has been used in European countries as a reference point for a common understanding of entrepreneurial competencies for goal setting and evaluation (Rațiu et al., 2023). The usefulness of this framework is also highlighted in a bibliometric study conducted by Sánchez-Hernández and Maldonado-Briegas (2023). However, the same study pointed out that previous studies were mostly done in economics and sustainable regional studies instead of education, indicating the research gap within the educational departments.

In the current state, there are several studies on entrepreneurship education conducted in the Malaysian context (e.g., Avramenko & Begum, 2018; R. Hussain &

Table 2
Subskills in mobilizing others according to levels

	Inspire and Get Inspired	Persuade	Communicate Effectively	Use Media Effectively	Application of Skills
Level 1 (Foundation)	I demonstrate a passion for challenges.	-	I am able to communicate my ideas to other people.	I can give instances of inspirational communication campaigns.	List examples of successful communication campaigns that learners encounter daily with support. Share ideas on everyday issues and propose solutions with guidance.
Level 2 (Foundation)	I involve myself actively in value-creation activities.	I can convince others by giving a diverse range of arguments.	I can use different methods to communicate my team's ideas.	I can elaborate on how different media can be applied to communicate with audiences in different ways.	Planned and delivered group presentations using different media.
Level 3 (Intermediate)	I do not feel demotivated due to difficulties.	I can convince others by giving evidence for my arguments.	I can communicate imaginative design solutions.	I can use different methods to deliver ideas of value creation.	Create prototypes and present them using different methods.
Level 4 (Intermediate)	I can be a good example when I lead.	I can enthuse others by connecting to their emotions	I can communicate my own or my team's ideas to people from different backgrounds.	I can apply media in an appropriate manner, which shows my awareness of the audience and purpose.	Lead a team project and present the project using different media.
Level 5 (Advanced)	I can obtain an endorsement to support my value-creation ideas.	I can present my pitch effectively in front of prospective funders.	I can communicate the vision of my own or my team's endeavor that enthuses and inspires external supporters.	I can change people's opinions on my value-creation activity using a planned social media approach.	Lead a team project that involves external parties and use social media to gain support.
Level 6 (Advanced)	I can be an inspiration to others despite challenging situations.	I can deal with resistance from people whose innovation and value will influence the creation of ideas.	I can create narratives and situations that inspire, motivate and move people.	I can plan a social media campaign to enthuse people to join my value-creation activity.	Lead a project that involves a certain level of risk and gain support from external parties using social media.

Table 2 (*continue*)

	Inspire and Get Inspired	Persuade	Communicate Effectively	Use Media Effectively	Application of Skills
Level 7 (Expert)	I can keep the momentum with my collaborators when involved in a challenging situation.	I can create a call to action to encourage stakeholders to collaborate.	I can participate in constructive conversations with the targeted community.	I can devise a communication strategy to move people in regard to my activity of value creation.	Lead a project that assumes a certain level of risk and gains support from external parties using social media over a certain period..
Level 8 (Expert)	I can form coalitions to materialize ideas into action.	I can get support for value-creating ideas by negotiating with others.	I can communicate with all relevant stakeholders so that they take responsibility and action on a value-creating opportunity.	I can maintain and get more support for my vision.	Lead a project that assumes a certain level of risk and gains support from external parties using social media with sustainable plans.

Othman, 2013; Ibrahim et al., 2015; Jaafar & Aziz, 2008; Nasrudin & Othman, 2012; Teoh & Chong, 2014; Yaman et al., 2014). However, these studies focused on adult learners or learners in tertiary education. There seems to be a lack of studies on entrepreneurship education targeting young learners. Mobilizing others, which is one of the key competencies in the EntreComp framework related to persuasion (McCallum et al., 2018), along with other competencies, has not been fully implemented in European countries (Seikkula-Leino et al., 2021). A study conducted by Seikkula-Leino et al. (2021), which involved 348 respondents consisting of policymakers, educators and stakeholders from 47 countries, showed that they have mostly used EntreComp in their work to mobilize others, which shows the importance of this competence. A study by Gorenc et al. (2023), which evaluated a nine-month elementary entrepreneurship education program in the European context, showed no significant improvement in skills related to mobilizing others, which begs the question of how competence can be better developed among young learners.

Communication skills are important for developing entrepreneurship skills. Similar to the intention of the present study, Mohamad and Idrus (2019) investigated the implementation of the written entrepreneurial communication course conducted in vocational colleges in Malaysia and found that writing business plans is a crucial element. A case study by I. S. Ahmad and Khan (2023) highlighted the importance of English language skills in entrepreneurship courses. These studies further illustrate the importance of teaching communication skills in entrepreneurship courses. Nevertheless, little is known about teaching entrepreneurial persuasive communication (EPC) skills in the context of Malaysian primary schools in the current literature.

Considering the importance of EPC skills and the research gap, this study would like to explore the current status of EPC teaching in the context of Malaysian primary schools.

Persuasive Communication Skills in Entrepreneurship

Among all the communication skills in entrepreneurship, persuasion is one of the most important skills relevant to the success of entrepreneurs (Baron & Markman, 2000; Ray, 1993). It is the ability to convince people to participate in a business, purchase a product/service, fund, or establish an alliance with the venture (Brush, 2008). Based on the EntrepComp framework, communication and persuasive skills are subsumed in 'Mobilizing Others' in the area of 'Resources.' The skill of 'Mobilizing Others' is described as impelling and inspiring pertinent stakeholders, obtaining the support needed to attain valuable results and showing effectual communication, persuasion, negotiation and leadership (Bacigalupo et al., 2016). The study by Kim and Tay (1993) showed that persuasion communication is important to recruit members and sell products. To promote entrepreneurship, programs and courses are

created and classified as distinctive study areas requiring special writing needs (Spartz & Weber, 2015).

METHODS

Participants

Five teachers teaching English and Design and Technology were selected for the needs analysis interviews. These teachers were chosen as these subjects cover entrepreneurial and communication skills. For instance, entrepreneurship is taught as a cross-curricular element in the two listed subjects (Abd Hamid, 2013). For English, communication skills are taught modularly, focusing on listening, speaking, reading and writing skills. For Design and Technology, communication skills are taught as pupils carry out a project and present their products. The five teachers were selected for a semi-structured interview session to explore their opinions about the skills that need to be taught in the module. The sampling method used was purposive sampling, as the participants were selected based on the following criteria:

1. Experience in teaching either English or Design and Technology for more than 5 years
2. Option to major in the selected subject.
3. Having at least a bachelor's degree in education.
4. The respective district or state education office should highlight a panel head for the selected subject or someone active in subject-related activities.

Criteria 1–3 were based on the studies by Abd Aziz (2011) and Awang et al. (2016), who selected their participants based on their years of experience and specialization. Criterion 4 is included for this study following the study conducted by Avramides et al. (2015), which included the heads of department in their study. Including heads of panels would provide useful insights as they had experience managing curriculum affairs for the subjects. The teacher selection criteria were also in line with the "experienced teachers" criteria mentioned in Palmer et al. (2005), which consists of years of experience, social recognition/nomination, and professional/social group membership.

The researcher selected participants from different school types to ensure that the findings in this part of the study can be applied to a wider context. The Malaysian primary school system has three major schools: National School, National-type School (Chinese) and National-type School (Tamil). Teachers from these types of schools were selected to obtain rounded perspectives from different cultural backgrounds. Table 3 illustrates the profiles of the selected teachers who participated in the interviews.

Data Collection

In the present study, data was collected based on two methods: (1) interview and (2) document analysis. The interview process was conducted following the aspects mentioned by Bolderston (2012): (1) participant selection, (2) preparation

Table 3
Profiles of selected teachers

Teacher code	District	School type	Subject	Gender	Years of experience	Major
T_BI1	Kuala Langat	National type (Tamil)	English	Female	14	English
T_BI2	Gombak	National	English	Female	9	English
T_BI3	Petaling Perdana	National	English	Female	9	English
T_D&T1	Klang	National type (Chinese)	D&T	Male	7	Math
T_D&T2	Klang	National type (Chinese)	D&T	Female	14	English

of the interview protocol, (3) interviewer's roles during the interview, (4) designing interview questions, (5) determining the timing, (6) the preamble and (7) managing the interview process. By focusing on these aspects, the researcher can ensure that data can be collected stringently.

Five sessions of semi-structured interviews, spanning thirty minutes to one hour and thirty minutes, were conducted following the questions presented in Appendix 1. In addition to the listed questions in Appendix 1, the researcher also posted follow-up questions to elicit more detailed responses from the interviewees.

The duration of the interviews is considered ample for data analysis, following the duration of semi-structured interviews suggested by DiCicco-Bloom and Crabtree (2006). In their paper, DiCicco-Bloom and Crabtree mentioned that in general practice, semi-structured interviews are conducted only once for each participant and can last between half an hour and more than a few hours. The time range of the interview sessions in the present study fulfilled the requirement as

Table 4
Duration of interview sessions

Interview Session	Duration
T_BI1	1:09:13
T_BI2	1:29:38
T_BI3	1:27:08
T_D&T1	0:30:08
T_D&T2	0:59:15

stated in DiCicco-Bloom and Crabtree's study. Table 4 shows the duration of each interview session.

The data from the interview were then analyzed using thematic analysis using Atlas-ti 8. The researcher created 386 codes for analysis by coding the data. Each transcript was created with codes between 40 and 111. The codes were created based on their relevance to the research questions and the focus of this study.

The Official Documents

Besides analyzing the interview transcripts, the researchers also collected official documents from the Ministry of Education. Analyzing these documents would provide a greater understanding of the current

curriculum, the current education trend and the common pedagogical practices in the nation. The analyzed documents include are included in Table 5.

The DSKPs are the standard-based curriculum and assessment documents containing the content and learning standards that pupils need to achieve by the end of the academic year. The Malaysia Education Blueprint 2013–2025 is the document that sets out the targets that our national education needs to be achieved from the preschool to the post-secondary level. The Roadmap 2015–2025 is a ten-year English language education plan for all levels of education in Malaysia. The SKPMG2 Standard 4 evaluation form is used in lesson observations. Analyzing these documents serves as a step of triangulation. By comparing the official documents with the interviewees' responses, we can better understand how EPC has been taught and emphasized in the current education system. The official documents were also analyzed through thematic analysis using Atlas-ti 8.

RESULTS

Existing Entrepreneurship and Persuasive Communication Skills

This discussion will start by answering Research Question 1: What are the components of entrepreneurial persuasive communication in the current curriculum according to the perspective of the practitioners?

From the interview with the teachers, the researchers identified some existing entrepreneurship and persuasive communication skills among primary school pupils. This is further supported by the information obtained from the official MOE documents, which prove that the skills should have been exposed to the learners at their age. If the pupils possess these skills, it is indicative of the skills being incorporated into the curriculum in some way or pupils having some kind of exposure in their daily lives.

Assessing Values and Practicality

From the interview sessions, the researchers discovered that some teachers believe that their pupils have a certain level of ability

Table 5
Official documents used in data analysis

Document	Number of Codes
DSKP English Year 6	12
DSKP English Year 5	9
DSKP English Year 4	10
DSKP RBT Year 6	20
DSKP RBT Year 5	16
DSKP RBT Year 4	21
Malaysia Education Blueprint 2013–2025	12
English Language Education Reform in Malaysia: The Roadmap 2015–2025	9
SKPMG2 Standard 4 Evaluation Form	7

to assess the value and the practicality of products. According to T_D&T2, this component is actually covered in Design and Technology.

Er… I would say, the basic part, they know how to differentiate, rather differentiate the practicality of, let's say, a product, like let's say we are doing a role-play a model car or to sell something, okay, which is something that they are familiar with, okay, at least they know how to differentiate whether it is worth buying or whether it is practical or not. I think that is part of entrepreneurship skills, right? (T_D&T2)

In the current curriculum of Design and Technology of Year 4, pupils are exposed to the skills of assessing sketches of products that they made and making amendments after the evaluation (Ministry of Education Malaysia, 2018b). The same skill can also be applied to assess the quality of ideas that can create values and improve those ideas to suit the needs of others. The same set of skills is also found among primary school learners in Mexico, in which, in their entrepreneurship subprogram, the learners are to calculate the cost of their production and evaluate the viability of their business plans (Cárcamo-Solís et al., 2017).

Basic Reasoning

The teachers also mentioned that their pupils have a basic level of reasoning, even though maybe only a small number of them have this skill:

I think persuasive skills probably reason out at a basic level should be okay. I think my students do have it, but I can't say the majority. (T_BI2)

Furthermore, T_BI2 also highlighted the limitations of such reasoning skills among the students:

If we talk about something that is not close to their hearts, it could be a bit difficult for them to come up with their reasoning skills, I mean, their reasonings. Also, it would mean that instead of encouraging them to talk, it would actually hinder them from talking. (T_BI2)

The response shows that students' reasoning skills are limited to topics that they are familiar with. It is difficult for students to extend their reasoning ability to issues that they are not interested in.

The analysis of the official documents showed that pupils have already been exposed to basic reasoning skills as early as Year 3. In the English language curriculum, pupils are taught to express basic opinions with reasons, give reasons for their predictions in Year 4 (Ministry of Education Malaysia, 2018a), and give reasons for the advice given in Year 6 (Ministry of Education Malaysia, 2022). The findings from a review study conducted by Vo and Csapó (2022) also corroborate the findings here. In their study, they found that children can perform inductive reasoning tasks. With the advent of technology, children gradually evolve their reasoning skills from paper-based to technology-based. From that, it is

assumed that pupils can cope with tasks that require basic reasoning skills.

Buying and Selling (Economic Knowledge)

According to the teachers, primary school pupils know about buying and selling. They are taught matters about money in mathematics. Pupils also obtained their experience of buying and selling from places like the school canteen and the bookstore:

> *Um, if we talk about the basic buying and selling knowledge, my kids have it because of their interaction in the canteen and the bookstore. If we talk about money matters, I think my kids have it. Thanks to mathematics. And I think we do have a discussion on money.* (T_BI2)

In Design and Technology, pupils are exposed to the skill of calculating costs for projects, food and packaging in Year 4 (Ministry of Education Malaysia, 2018b). In addition, a study by Bucior and Bucior (2019) focusing on primary school pupils in Poland revealed that most pupils in their research had a basic understanding of economic terms such as money, inflation, and price. Basic economic knowledge would help learners imagine how actual selling and buying happen in real-life situations and help them be financial-savvy persuaders.

Designing and Planning

Pupils in the upper primary level have to study Design and Technology for one hour per week. According to T_D&T1, pupils are exposed to skills such as designing and planning the making of products following systematic steps.

> *I think so, yes, I think so. Because we have the subject RBT, as you mentioned, just now, design and technology may be where pupils can learn about entrepreneurship through this subject. There are a lot of skills involved in this subject really, not only designing things but also teaching people how to make or invent things and design things and products, including sketching ideas, forming financial planners, producing the product and learning how to promote your product.* (T_D&T1)

From the teacher's feedback, pupils are taught skills that help them design and plan products relevant to the concept of entrepreneurship in this study. If the skills are nurtured and well-acted upon, pupils can convert their ideas into something of financial, cultural or social value to others.

The standard-based document for Design and Technology for Year 4 also shows the steps that pupils have to follow in designing and planning a project. The process entails generating ideas, sketching designs, evaluating sketches, improving designs, calculating costs, producing products and presenting projects using different media (Ministry of Education Malaysia, 2018b). These well-defined steps can also guide the researcher in designing tasks that target pupils' EPC skills. This set of skills is similar to design thinking skills, comprised of ongoing experimentation,

sketching, prototyping, testing, and trying out concepts and ideas (Dam & Siang, 2021). A study by Gennari et al. (2021) in Italy showed that children could reflect on their design process. The evidence shows that primary school learners may be able to design and plan for their projects following defined steps with guidance.

Teamwork

As the Ministry of Education advocates 21st-century learning in schools, group work has been an activity that engages students with learning and, at the same time, promotes their social skills. From the feedback given by one of the teachers, pupils have acquired the skill of teamwork through the various group activities that are conducted with the pupils:

> *I think they have teamwork. Okay, teamwork. Because most of the time, I will give them group activities and leadership skills. I think these two are the skills that they have, but I don't think they have financial skills yet because of their lack of experience and lack of the use of money in real life.* (T_D&T1)

Nevertheless, from the response, pupils have the skills of working in groups and leading others, acquired through group activities. However, it is not clear whether pupils in Malaysia can work and communicate entrepreneurially in groups, which such a potential can be further explored in this study. A study conducted by Axelsson et al. (2015), which focused on the Swedish preschool context, showed

that cooperative and enterprising skills are practiced in schools. If these skills have already been practiced at the preschool level, there should be no problem that they will be practiced at the primary school level.

Looking at the learning standards in the standard-based documents in English and Design and Technology, it is unclear that collaborative skills are listed. However, in the SKPMG2 Standard 4 lesson observation form, one criterion is that pupils should work cooperatively as active learners. Thus, if school teachers know the evaluation criteria, their pupils should be familiar with conducting collaborative activities.

Elements of Entrepreneurial Persuasive Communication Skills Needed

This discussion will answer the second research question: What elements of entrepreneurial persuasive communication are needed according to the perspective of the practitioners?

From the analysis of the interview transcripts, official documents and literature, the EPC-related skills that primary school learners need to improve on include knowledge of entrepreneurship, extended use of persuasion, pricing items, creativity, English language skills, reasoning and justifying products, online marketing, understanding the target group, empathy, confidence and courage, as well as risk-taking and perseverance.

Knowledge of Entrepreneurship

According to the teachers, pupils do not have enough knowledge to think

entrepreneurially. The researcher could see that pupils need to be equipped with knowledge to think like entrepreneurs.

From my point of view, okay, from what I can get from the students' feedback, I don't think they have enough knowledge to think that way. They are not really exposed to all this, actually. All right, and then what they focus on might not have something to do with entrepreneurship. (T_D&T2)

The teacher's statement highlights the importance of entrepreneurial knowledge. The existing literature suggests that entrepreneurial knowledge relates to entrepreneurial intention (T. Hussain et al., 2021). If pupils lack ample knowledge of entrepreneurship, they may not intend to be entrepreneurs.

From the analysis of the standard documents of both subjects, there is no learning standard stating entrepreneurship explicitly as the content, even though practicing basic entrepreneurship is stated as one of the aims of the Design and Technology curriculum (Ministry of Education Malaysia, 2021). Even though entrepreneurial characters are important in completing tasks in design and technology, the current curriculum lacks emphasis on explicit knowledge of entrepreneurship.

Rosa et al. (1996), as mentioned in Johansen and Schanke (2013), characterized approaches to learning entrepreneurship as (1) education about entrepreneurship, (2) education for entrepreneurship and (3) education through entrepreneurship. From

the analysis in the context of Malaysia, learning entrepreneurship at the primary school level is based on education through an entrepreneurship approach, in which students learn the entrepreneurial process by completing various tasks given by teachers. The same case is also similar to studies conducted in other countries, such as the studies conducted by Bisanz et al. (2019) in Austria, Weicht et al. (2020) in three European countries, and Zupan et al. (2018) in Slovenia. In their cases, entrepreneurship is learned by completing projects or challenges facilitated by different teaching methodologies. To improve pupils' explicit knowledge of entrepreneurship, they may also need to learn entrepreneurship through other approaches following studies such as T. Hussain et al. (2021), Karyaningsih (2020), Scuotto and Morellato (2013), which showed that entrepreneurial knowledge plays an important role to determine ones' entrepreneurial intention.

Extended Use of Persuasion

The teachers' responses revealed that pupils have some basic persuasive skills that they use daily. However, their persuasive skills are only limited to their interests. According to the teachers, the pupils cannot persuade others about general things they are not particularly keen on.

Okay, persuasive communication skills for that child… Okay, I would say that if a child they would like to have, okay, I'll put it this way: if the children want for their good things or they can persuade,

even you also they can persuade they can persuade their parents they can persuade the teachers because why? They want that particular thing. Okay? If let's say the things that they wanted, for example, for their own good, they could persuade, but for the general thing, they could not. (T_BI3)

From the statement given by T_BI3, we can observe the gap in persuasion skills possessed by the pupils. Pupils can only persuade on a limited scope of topics. From the statement given by T_BI3, pupils can only be persuaded to obtain what they want. However, in the case of entrepreneurship, this kind of persuasion may not be working to persuade others; they may need to let others know why they should accept what is offered to them. Given this, pupils need to expand their persuasive skills. They need to be trained on how to persuade for various entrepreneurship-related topics.

In the Roadmap 2015–2025, for primary school level, pupils are expected to only use English language in basic and ordinary tasks (Ministry of Education Malaysia, 2015); in Design and Technology, persuasion skills may only be used when pupils have to present their products, such as learning standards 'making simple documentation about the process of making the product and do presentations using a variety of media' (Ministry of Education Malaysia, 2022). In this case, pupils may not be exposed to the technique of persuading people, especially in an entrepreneurial manner, as the curriculum of both subjects offers few opportunities for pupils to experiment with it.

In line with this finding, a study by Lonigro et al. (2017) also suggested that school interventions promoting the development of more sophisticated persuasive strategies (e.g., compromising, giving guarantees, and bargaining) can foster healthier social relationships and aid in conflict resolutions.

Pricing Items

To equip pupils with entrepreneurial skills, some teachers opined that pupils need to know how to estimate the value of products. The excerpt below shows how one of the teachers commented on the need for this skill:

And then they make posters and promote their products; I find it very interesting because they all enjoy and can learn because many hike up the price of the item without any market survey or proper consideration. So, from there, the teacher can actually tell them how they can improve that part. Okay, this was based on my experience in school when I first came to [school's name mentioned]. (T_D&T2)

From the response given by T_DT2, the teacher mentioned the problem of overpricing when the pupils tried to promote their products. Poor pricing may impair entrepreneurs' profit-making as it can affect the performance of enterprises, especially nascent ones (Flatten et al., 2014).

However, in the Design and Technology curriculum, pupils need to learn about calculating the cost for designs and packing in Year 4 (Ministry of Education Malaysia,

2018b), the cost of materials in Year 5 (Ministry of Education Malaysia, 2019) and prepare a list of equipment, materials, cost estimation and working schedule for a project in Year 6 (Ministry of Education Malaysia, 2021). From this, we can see a gap between the ideal in the curriculum and the actual situation among primary school pupils. It may be due to pupils' lack of practical experience in purchasing materials for projects or items that are not closely related to their daily lives. A study by Sawatzki and Goos (2018) showed that two-thirds of their primary school participants could compute the cost and the break-even price of their sold items. However, only about one-third of their participants were about to determine a sale price that made a profit. Therefore, pupils may need to improve their pricing capability to make a profit.

Creativity

In the opinion of one of the respondents, the pupils cannot think creatively due to a "spoon-feeding" culture. This kind of culture hinders pupils from thinking creatively, and therefore, they cannot think entrepreneurially.

> *And then, when you don't give them room for creativity, they will come up exactly how you want them to do. Because they don't have creativity.* (T_BI3)

Communicating or using language creatively is a high-level skill for primary school pupils. In the six performance levels in English speaking skills, pupils can obtain performance level six, which is the highest band in the assessment if they can describe personality and plans or events creatively using suitable statements; in performance level five, which is the second highest band, pupils are only required to describe personality and plans or events using suitable statements with some relevant details (Ministry of Education Malaysia, 2022). It shows that creativity is regarded as a higher-level skill in the primary school curriculum and poses some challenges for pupils to master it. This finding is similar to the finding of Sarwat et al. (2021), who discovered that the lack of creative ideas was one of the Pakistani primary school learners' writing problems. One of the factors behind the writing problem is learners' lack of opportunities for free writing. Therefore, learners should be given more platforms and opportunities to express their creative ideas to promote creativity.

English Language Skills

According to the teachers, pupils' persuasive skills are considerably compromised when it comes to persuading in English, which is not their first language.

> *So, when it comes to persuading people, I think they will have a problem in persuading people in the English language because they can persuade people in Malay and Tamil, but when it comes to English, persuading people overseas… they actually lack that.* (T_BI1)

The response reveals that pupils need to overcome their language barrier to be persuasive to a wider audience. Hence, their English communication skills also need to be improved.

According to the Roadmap 2015–2025, a baseline study of the Malaysian University English Test (MUET) showed that students could not identify relevant and irrelevant information, infer, rephrase or synthesize information. Many students were also reported to be hesitant to speak English and lacked the words to express and elaborate on their thoughts and ideas. Their ideas were often confined to contexts of their immediate interests, and students lacked knowledge of general topics and current affairs. Many candidates could not write grammatically and lacked awareness of writing in different registers (Ministry of Education Malaysia, 2015). If this situation even happens at the tertiary level, it could be even worse in the primary school context. According to Nasir and Aziz (2020), in English as a second language (ESL), mastering productive skills such as writing and speaking is a common problem learners face. Something must be done from earlier education to equip learners with the language proficiency to help them in their higher education and future careers.

Reasoning and Justifying Products

The interview sessions also revealed pupils' inability to reason and justify their products. The excerpt below shows a teacher's response to pupils' ability in reasoning and justifying:

Hmm, I still find them quite childish in a way, okay, or the way they think when we ask them how they want to sell a product, like the recent project, the model car ask them, okay, why do people design a car and then what is the purpose? Well, not many of them can answer that. Hmm. So, let's say you were to ask me whether they can think in an entrepreneurial manner. I am not so sure. (T_D&T2)

The teacher's response demonstrates that reasoning and justifying differ from designing and planning. Even if the pupils can develop their products, others may not understand them; hence, they cannot persuade others if they have to sell their products to others.

Looking at the standard-based documents of Design and Technology, the skill of reasoning is not clearly stated in the documents, even though in Year 6, pupils have to state the products that they intend to produce based on the situation as well as evaluate and improve the sketch of their products (Ministry of Education Malaysia, 2021). Despite the stipulation in the standard document, how learners can be prompted and guided to use reasoning skills is unclear. This part of the skill is similar to the explanation and reasoning skill, one of the critical thinking skills in studies conducted by Gelerstein et al. (2016) and Suryanti et al. (2018). In Suryanti et al.'s (2018) study, which focused on Grade 5 (typically age 10–11) pupils, the pupils demonstrated a low level of explanation skills prior to their intervention. As there

is also an observed deficiency in the local context, an intervention may need to be proposed to equip learners with this skill.

Online Marketing

Given the rise of e-commerce and its development, which makes it more convenient for consumers, selling things online seems to be an important skill in Industry 4.0.

> *Because entrepreneurship, like I've men… like, like I've mentioned earlier, it's it grows, it doesn't just only us physically being in, in a mall or a restaurant, or it doesn't just stop in Shopee. There are a lot of other apps that could actually promote entrepreneurship. In fact, social media, TikTok, and Instagram can actually help students. I mean, maybe students trying to start their little business would start with Instagram or TikTok to promote their stuff. That could be a skill, too, to persuade people through Instagram and other media to buy their products.* (T_BI2)

The teacher's response suggests that young entrepreneurs can use various social media platforms to promote their products.

Using media effectively is one of the subskills of 'Mobilizing Others' in the EntreComp framework. The skill mentioned by the teacher reflected this subskill's Level 3 performance (intermediate level), in which learners can use several methods, including social media, to communicate value-creating ideas effectively. In Muñoz-Repiso et al.'s (2020) study conducted in Spain, skills such as content sharing and content creation are part of assessing digital competence in compulsory education. It shows the importance of this skill not only in the local context but also in the global context.

Understanding the Target Group

To persuade effectively, young entrepreneurs need to understand who they are persuading and apply different strategies to reach different types of consumers. The importance of knowing the consumers' needs is also mentioned by one of the teachers during the interview:

> *So first, they need to know the needs and how to persuade them based on the needs. At the same time, they will have to know the background of their customers and where they come from. How you persuade customers in this area differs from how you persuade customers in a different area.* (T_BI1)

The response shows that people from different demographic groups may need to be persuaded differently. Therefore, a persuader should understand who they are persuading before devising their plan.

The response given by the teacher also corresponded with the foundational level learning outcome of 'Mobilizing Others' in the EntreComp framework, in which learners should be able to talk about how different target groups can be reached by using different modes of media (Bacigalupo

et al., 2016). Learners should be allowed to examine and compose different writing genres to enhance audience awareness (Taylor, 2021) and role reversal (Liu et al., 2021) to improve audience awareness. The studies by Liu et al. (2021) and Taylor (2021) showed the lack of audience awareness among students in the higher education setting before their intervention, which may imply that the lack of skill can even be more apparent in the primary school context. The triangulation of different data sources shows that understanding the audience is a fundamental skill to be acquired before progressing to more sophisticated persuasive communication skills.

Empathy

In connection with the idea of understanding the target audience, one of the teachers involved also holds the opinion that young entrepreneurs need to have empathy to be considerate persuaders:

> *And also pupils because they are too young, I think they need awareness, awareness of what other people feel or what other people think we can't just keep on persuading others, like, keep on giving our ideas without thinking of other people's feelings.* (T_D&T1)

From the response, we can see that if persuaders intend to connect with their target audience emotionally, empathy seems to be an important skill they need to master. It would be less effective if persuaders focus only on the content of their persuasion without considering their audience's emotions and needs.

In the standard-based documents for both English and Design and Technology, empathy is described as one of the qualities of 'caring,' which is one of the characteristics of pupils' profile in the 21st century. In the profile description, caring pupils can demonstrate understanding, compassion, and admiration for the wants and emotions of others (Ministry of Education Malaysia, 2021, 2022). These characteristics are analogous to empathy, an important skill one needs to master to understand other people better. Furthermore, Novak (2022), who researched the topic of digital empathy in the context of Croatia, found that digital empathy is not wholly realized in the education system. Digital empathy is important as it is a digital emotional intelligence that helps build a good relationship with others using digital media.

Confidence and Courage

In accordance with one of the teachers, a persuasive entrepreneur needs to be confident:

> *They need to have it, but they don't have the courage—actually, they don't believe in themselves. Whatever things they do, they need to believe in themselves.* (T_BI3)

According to the teacher, pupils may not succeed in their entrepreneurial pursuits if they lack confidence or courage. Nevertheless, many Malaysian primary

school learners lack self-confidence in communicating in English due to their fear in class, shyness and anxiety (Nijat et al., 2019). Therefore, self-confidence needs to be nurtured so pupils can face the challenges of the 21st century.

Risk-taking and Perseverance

Another important skill that young entrepreneurs need is the ability to take risks and persevere despite hardship. The extract below shows the feedback from one of the teachers in the interview:

> *Their business skills are definitely number one, and they are ready to take risks. Ready to take the risk number two, don't easily break. Yes, you can have ups and downs in your business. But one day you crush down, don't think that is the end of your life. Stand up again. Yes, try again every day. So, these two things I tell you are the basic things. Try to take the risk at the same time. If you have a crash, don't worry; stand up for the next day. Don't break down.* (T_BI3)

From the response given by T_BI3, entrepreneurs should be mentally prepared to take risks and strong enough to persist in their efforts despite difficulties. These skills will help entrepreneurs to keep their business going and achieve success.

However, risk-taking quality is not mentioned anywhere in the selected official documents. A potential reason for this is that reckless and extreme risk-taking behavior might cause potential damage to the risk-takers and society (Roulet,

2015). Nevertheless, a study by Duell and Steinberg (2021) shows that positive risk-taking offers developmental benefits such as gaining new skills, having a sense of identity and benefitting from exciting opportunities. Thus, providing young learners with the opportunities to assume risks can be beneficial for them in acquiring essential entrepreneurial qualities and persuasive communication skills.

A summary of the findings in this needs analysis study is presented in Table 6.

Table 6 summarizes the literature and relevant documents related to the research findings. As some of the literature was from other countries, a more detailed investigation needs to be done

to assess the necessity of those skills to be taught in local primary schools and how they can be taught. Thus, the researchers suggest the involvement of experts from related fields (entrepreneurship and persuasive communication) in future investigations. Nevertheless, the findings in this study can contribute to reducing the gap in the current literature as research in the primary school context and the Malaysian setting is lacking.

DISCUSSION

The findings indicate that teachers know some entrepreneurial persuasive communication elements practiced in the current Malaysian primary school curriculum. The curriculum documents list being an effective communicator and team player in the 21st-century profiles (Ministry of Education Malaysia, 2021,

Table 6
Summary of findings

Research Question	Elements/Components of EPC	Supportive Evidence
Components of entrepreneurial persuasive communication in the current curriculum	Assessing Values and Practicality	Cárcamo-Solís et al. (2017), Ministry of Education Malaysia (2018b)
	Basic Reasoning	Ministry of Education Malaysia (2018a, 2022), Vo & Csapó (2022)
	Buying and Selling (Economic Knowledge)	Bucior & Bucior (2019), Ministry of Education Malaysia (2018b)
	Designing and Planning	Dam & Siang (2021), Gennari et al. (2021), Ministry of Education Malaysia (2018b)
	Teamwork	Axelsson et al. (2015), SKPMG2 Standard 4 lesson observation form
Elements of entrepreneurial persuasive communication needed	Knowledge of Entrepreneurship	Bisanz et al. (2019), T. Hussain et al. (2021), Karyaningsih (2020), Ministry of Education Malaysia (2021), Scuotto & Morellato (2013), Weicht et al. (2020), Zupan et al. (2018)
	Extended Use of Persuasion	Lonigro et al. (2017), Ministry of Education Malaysia (2015, 2021)
	Pricing Items	Sawatzki & Goos (2018)
	Creativity	Sarwat et al. (2021)
	English Language Skills	Ministry of Education Malaysia (2015), Nasir & Aziz (2020)
	Reasoning and Justifying Products	Gelerstein et al (2016), Suryanti et al. (2018)
	Online Marketing	Muñoz-Repiso et al. (2020)
	Understanding the Target Group	Taylor (2021), Liu et al. (2021)
	Empathy	Novak (2022)
	Confidence and Courage	Nijat et al. (2019)
	Risk-Taking and Perseverance	Duell & Steinberg (2021), Roulet (2015)

2022). This stipulation highlights the importance of communication skills and teamwork in the national curriculum agenda, and practitioners must be aware of them. Elements such as assessing values and practicality, buying and selling, and designing and planning are present in the current curriculum as stipulated in the syllabus for Design and Technology (Ministry of Education, 2018b, 2019, 2021), which implies learners' exposure to these elements in the current curriculum.

The current English syllabus teaches learners to give reasons as they practice speaking and writing skills (Ministry of Education Malaysia, 2018a, 2020, 2022). However, elements such as knowledge of entrepreneurship, extended use of persuasion, pricing items, creativity, reasoning and justifying products, online marketing, understanding the target group, empathy, risk-taking and perseverance need to be enhanced in the current curriculum as they are not sufficiently introduced.

It is suggested that in primary schools, learners' EPC skills are most likely at the foundation level to relate the findings of this study to the levels of 'mobilizing others' in the EntreComp framework (Table 2). The findings of this study further confirmed the importance of the EntreComp framework in mapping out the entrepreneurship skills of learners according to their developmental stage and as a source of reference to develop those skills.

In the EntreComp framework, entrepreneurial competence is understood as a set of knowledge, skills and attitudes (Bacigalupo et al., 2016). Having entrepreneurial knowledge is essential as it is perceived as a non-material resource according to the EntreComp framework; extended use of persuasion, which is closely related to 'mobilizing others' in the EntreComp framework, plays a vital role in gaining support from important stakeholders in an entrepreneurial pursuit; pricing items is related to financial and economic literacy which help entrepreneurs to sustain their value-creating pursuits; creativity, as a competence also listed in the EntreComp framework, plays a crucial role in developing value-creating ideas that serve as solutions to existing problems; reasoning and justifying products is part of ethical and sustainable thinking which entrepreneurs can evaluate the impact of their products in their niche market and environment; also related to 'mobilizing others,' online marketing helps entrepreneurs to gain and maintain support by using different media; understanding target group, which

is related 'spotting opportunities', allows entrepreneurs to identify the needs that have not been fulfilled; empathy, a skill of 'working with others' is the foundation of managing relationships with end users; risk-taking and perseverance are the key of 'coping with uncertainty, ambiguity and risk' entail coping with adverse situations strategically while minimizing risks by assessing them (Bacigalupo et al., 2016). By referencing the findings with the EntreComp framework, we can further confirm the importance of those elements from a global perspective. However, they have not been fully materialized in the current curriculum.

Despite not being listed in the EntreComp framework, English language skills are important in developing primary school EPC skills. The lack of English language skills is a problem in national primary education (Nasir & Aziz, 2020). Nevertheless, English language skills are important as they help develop entrepreneurship skills (I. S. Ahmad & Khan, 2023) and should not be neglected in entrepreneurship education. Thus, this study expands the current understanding of the EntreComp framework by highlighting the importance of English language skills in complementing entrepreneurship skills.

Regarding the theoretical implications, the needs analysis expands our understanding of EPC skills, particularly the 'Mobilizing Others' sub-skill in the EntreComp framework. While 'Mobilizing Others' focuses on inspiring, persuading, communicating effectively, using media, and applying skills, the analysis highlights

additional skills like empathy, creativity, confidence, courage, risk-taking, and perseverance. This broadens the scope of EPC skills to include practical and affective aspects.

In terms of practical implications, entrepreneurship and EPC skills should be integrated into the curriculum as essential cross-curricular elements alongside co-curricular activities. Curriculum developers need to prioritize these skills and ensure they are taught in various contexts. Additionally, in-service and pre-service teacher training should focus on helping educators from all subjects effectively incorporate EPC skills into their lessons.

This study has some limitations. While it highlights the need to teach EPC (Entrepreneurship, Problem-solving, and Communication) skills in primary schools, it does not provide details on how to implement this. Also, since the study was conducted in Malaysia, the findings may not apply to other settings.

Further research should focus on teaching EPC skills by seeking input from entrepreneurship, communication, and education experts. Their insights could help create a clearer plan for teaching these skills, better-preparing learners for future opportunities in entrepreneurship.

CONCLUSION

To conclude, it is observed that in the current curriculum, students were exposed to skills such as assessing values and practicality, reasoning, buying and selling, designing and planning, and teamwork at a basic level. However, primary schoolers need knowledge of entrepreneurship, the way to use persuasion in various topics, pricing items, thinking and communicating thoughts, online marketing, understanding their target group, and empathy. By highlighting the existing skills and the needed skills, the findings in this study add more details of the persuasive communication elements in the EntreComp Framework, specifically in the subskills of 'Mobilizing Others.' Regarding the implication of educational practice, the needs analysis findings suggested the introduction of an entrepreneurial persuasive communication module so that learners can learn EPC skills more systematically. Nevertheless, the introduction of the module should be context-specific as the needs analysis was conducted in the context of Malaysian primary schools. The effectiveness of the module also depends on its development and implementation. The findings of this study can fill a significant gap in the current literature, particularly in the context of primary schools in Malaysia, where research is lacking. Additionally, they call for further investigation into how the skills can be taught so that learners can benefit from the module and apply those skills in their future careers.

ACKNOWLEDGEMENT

REFERENCES

Abd Aziz, M. S. (2011). Assessment practices of high school teachers in Malaysia. *English Language Assesssment.* Academia. https://www.academia.edu/6690687/Assessment_Practices_of_High_School_Teachers_in_Malaysia

Abd Hamid, M. (2013). *Entrepreneurship education: The implementation in Year 1 primary school curriculum in Malaysia. A case study of one district in East Peninsular Malaysia* [Doctoral thesis, The University of York]. White Rose eTheses Online. https://etheses.whiterose.ac.uk/id/eprint/6141/

Ahmad, I. S., & Khan, Z. J. Y. (2023). English language skills and becoming a global entrepreneur: Lessons for entrepreneurship education. *International Journal of Learning, Teaching and Educational Research, 22*(6), 195-211. https://doi.org/10.26803/ijlter.22.6.11

Ahmad, S. Z. (2013). The need for inclusion of entrepreneurship education in Malaysia lower and higher learning institutions. *Education + Training, 55*(2), 191-203. https://doi.org/10.1108/00400911311304823

Ahmad, S. Z., & Buchanan, R. F. (2015). Entrepreneurship education in Malaysian universities. *Tertiary Education and Management, 21*(4), 349-366. https://doi.org/10.1080/13583883.2015.1106577

Avramenko, A., & Begum, M. (2018). Reflections on practice-centred curricula in teaching entrepreneurship in Malaysia. *International Journal of Management Applied Research, 5*(3), 135-152. https://doi.org/10.18646/2056.53.18-010

Avramides, K., Hunter, J., Oliver, M., & Luckin, R. (2015). A method for teacher inquiry in cross-curricular projects: Lessons from a case study. *British Journal of Educational Technology, 46*(2: Special Issue), 249-264. https://doi.org/10.1111/bjet.12233

Awang, S., Ahmad, S., Alias, N., & DeWitt, D. (2016). Design of an instructional module on Basic Life Support for homeschooled children. *Cogent Education, 3*(1), Article 1188439. https://doi.org/10.1080/2331186X.2016.1188439

Axelsson, K., Hägglund, S., & Sandberg, A. (2015). Entrepreneurial learning in education: Preschool as a take-off for the entrepreneurial self. *Journal of Education and Training, 2*(2), 40-58. https://doi.org/10.5296/jet.v2i2.7350

Bacigalupo, M., Kampylis, P., Punie, Y., & Van den Brande, G. (2016). *EntreComp: The entrepreneurship competence framework* (Publication number EUR 27939 EN). European Commission. https://doi.org/10.2791/593884

Baron, R. A., & Markman, G. D. (2000). Beyond social capital: How social skills can enhance entrepreneurs' success. *Academy of Management Executive, 14*(1), 106-116. https://doi.org/10.5465/ame.2000.2909843

Bisanz, A., Hueber, S., Lindner, J., & Jambor, E. (2019). Social entrepreneurship education in primary school: Empowering each child with the YouthStart entrepreneurial challenges programme *Discourse and Communication for Sustainable Education, 10*(2), 142-156. https://doi.org/10.2478/dcse-2019-0024

Bolderston, A. (2012). Conducting a research interview. *Journal of Medical Imaging and Radiation Sciences, 43*(1), 66-76. https://doi.org/10.1016/j.jmir.2011.12.002

Brush, C. G. (2008). Pioneering strategies for entrepreneurial success. *Business Horizons, 51*(1), 21-27. https://doi.org/10.1016/j.bushor.2007.09.001

Bucior, M., & Bucior, G. (2019). Economic knowledge among primary school students – An example of two polish schools in the Gdańsk region. In L. Gómez-Chova, A. L. Martínez, & I. C. Torres (Eds.), *11th International Conference on Education and New Learning Technologies* (pp.

7185-7191). IATED Digital Library. https://doi.org/10.21125/edulearn.2019.1716

Cárcamo-Solís, M. d. L., Arroyo-López, M. d. P., Alvarez-Castañón, L. d. C., & García-López, E. (2017). Developing entrepreneurship in primary schools. The Mexican experience of "My first enterprise: Entrepreneurship by playing". *Teaching and Teacher Education, 64*, 291-304. https://doi.org/10.1016/j.tate.2017.02.013

Czyzewska, M., & Mroczek, T. (2020). Data mining in entrepreneurial competencies diagnosis. *Education Sciences, 10*(8), Article 196. https://doi.org/10.3390/educsci10080196

Dam, R. F., & Siang, T. Y. (2021, December 3). *What is design thinking and why is it so popular?* Interaction Design Foundation - IxDF. https://www.interaction-design.org/literature/article/what-is-design-thinking-and-why-is-it-so-popular

DiCicco-Bloom, B., & Crabtree, B. F. (2006). The qualitative research interview. *Medical Education, 40*(4), 314-321.

do Paço, A., & Palinhas, M. J. (2011). Teaching entrepreneurship to children: A case study. *Journal of Vocational Education & Training, 63*(4), 593-608. https://doi.org/10.1080/13636820.2011.609317

Duell, N., & Steinberg, L. (2021). Adolescents take positive risks, too. *Developmental Review, 62*, Article 100984. https://doi.org/10.1016/j.dr.2021.100984

Fellnhofer, K. (2019). Toward a taxonomy of entrepreneurship education research literature: A bibliometric mapping and visualization. *Educational Research Review, 27*, 28-55. https://doi.org/10.1016/j.edurev.2018.10.002

Flatten, T. C., Engelen, A., Möller, T., & Brettel, M. (2014). How entrepreneurial firms profit from pricing capabilities: An examination of technology–based ventures. *Entrepreneurship*

Theory and Practice, 39(5), 1111-1136. https://doi.org/10.1111/etap.12098

Garrido-Yserte, R., Crecente-Romero, F., & Gallo-Rivera, M.-T. (2020). The relationship between capacities and entrepreneurial intention in secondary school students. *Economic Research-Ekonomska Istraživanja, 33*(1), 2322-2341. https://doi.org/10.1080/1331677X.2019.1697328

Gelerstein, D., de Río, R., Nussbaum, M., Chiuminatto, P., & López, X. (2016). Designing and implementing a test for measuring critical thinking in primary school. *Thinking Skills and Creativity, 20*, 40-49. https://doi.org/10.1016/j.tsc.2016.02.002

Gennari, R., Matera, M., Melonio, A., Rizvi, M., & Roumelioti, E. (2021). Reflection and awareness in the design process: Children ideating, programming and prototyping smart objects. *Multimedia Tools and Applications, 80*(26), 34909-34932. https://doi.org/10.1007/s11042-020-09927-x

Gorenc, J., Gomezel, A. S., Kitić, Ž., & Zupan, B. (2023). The effect of primary school entrepreneurship education programs on the evolution of pupils' human capital assets. *Economic and Business Review, 25*(4), 182-201. https://doi.org/10.15458/2335-4216.1326

Hassan, H., Sade, A., & Rahman, M. (2020). Shaping entrepreneurial intention among youngsters in Malaysia. *Journal of Humanities and Applied Social Sciences, 2*(3), 235-251. https://doi.org/10.1108/JHASS-02-2020-0029

Hussain, R., & Othman, N. (2013). Entrepreneurship module in community colleges Malaysia. *International Journal of Trade, Economics and Finance, 4*(6), 425-429. https://doi.org/10.7763/IJTEF.2013.V4.330

Hussain, T., Zia-Ur-Rehman, M., & Abbas, S. (2021). Role of entrepreneurial knowledge and personal attitude in developing entrepreneurial intentions

in business graduates: A case of Pakistan. *Journal of Global Entrepreneurship Research*, *11,* 439-449. https://doi.org/10.1007/s40497-021-00283-0

Ibrahim, W. N. A., Bakar, A. R., Asimiran, S., Mohamed, S., & Zakaria, N. S. (2015). Impact of entrepreneurship education on the entrepreneurial intentions of students in technical and vocational education and training institutions (TVET) in Malaysia. *International Education Studies, 8*(12), 141-156. https://doi.org/10.5539/ies.v8n12p141

Jaafar, M., & Aziz, A. R. A. (2008). Entrepreneurship education in developing country: Exploration on its necessity in the construction programme. *Journal of Engineering, Design and Technology, 6*(2), 178-189. https://doi.org/10.1108/17260530810891306

Johansen, V., & Schanke, T. (2013). Entrepreneurship education in secondary education and training. *Scandinavian Journal of Educational Research*, *57*(4), 357-368. https://doi.org/10.1080/00313831.2012.656280

Karyaningsih, R. P. D. (2020). Does entrepreneurial knowledge influence vocational students' intention? Lessons from Indonesia. *Entrepreneurial Business and Economics Review, 8*(4), 138-155. https://doi.org/10.15678/EBER.2020.080408

Kim, T. B., & Tay, R. S. T. (1993). Persuasive communication and Singapore entrepreneurs. *Journal of Small Business & Entrepreneurship, 10*(3), 77-90. https://doi.org/10.1080/08276331.1993.10600430

Liu, T.-L., Yang, Y.-F., & Hong, Y.-C. (2021). Raising students' audience awareness for oral presentation through online role-reversal. *System, 99*, Article 102510. https://doi.org/10.1016/j.system.2021.102510

Lonigro, A., Baiocco, R., Baumgartner, E., & Laghi, F. (2017). Theory of mind, affective empathy, and persuasive strategies in school-aged children.

26(6), Article e2022. https://doi.org/10.1002/icd.2022

Mahmud, M. S., Maat, S. M., Rosli, R., Sulaiman, N. A., & Mohamed, S. B. (2022). The application of entrepreneurial elements in Mathematics teaching: Challenges for primary school mathematics teachers. *Frontiers in Psychology, 13*, Article 753561. https://doi.org/10.3389/fpsyg.2022.753561

McCallum, E., Weicht, R., McMullan, L., & Price, A. (2018). *EntreComp into Action - Get inspired, make it happen: A user guide to the European Entrepreneurship Competence Framework* (M. Bacigalupo & W. O`keeffe, Eds.; Publication number EUR 29105 EN). European Commission. https://doi.org/10.2760/574864

Ministry of Education Malaysia. (2015). *English Language Education Reform in Malaysia: The Roadmap 2015-2025*. http://eltc.moe.edu.my/roadmap/The%20Roadmap%202015-2025.pdf

Ministry of Education Malaysia. (2016). *Buku Penerangan Kurikulum Standard Sekolah Rendah (Semakan 2017)* [Curriculum Standard Explanation Book for Primary School (Revised 2017)]. http://bpk.moe.gov.my/index.php/terbitan-bpk/buku-penerangan-kurikulum?download=1715:buku-penerangan-kssr-semakan-2017

Ministry of Education Malaysia. (2018a). *Kurikulum Standard Sekolah Rendah: Bahasa Inggeris Sekolah Jenis Kebangsaan - Dokumen Standard Kurikulum dan Pentaksiran Tahun 4* [Standard Curriculum for Primary Schools: English Language (National-Type Schools) – Year 4 Curriculum and Assessment Standard Document]. http://bpk.moe.gov.my/index.php/terbitan-bpk/kurikulum-sekolah-rendah/category/335-dskp-tahun-4?download=4481:dskp-kssr-semakan-2017-bahasa-inggeris-sjk-tahun-4

Ministry of Education Malaysia. (2018b). *Kurikulum Standard Sekolah Rendah: Reka Bentuk dan*

Teknologi - Dokumen Standard Kurikulum dan Pentaksiran Tahun 4 [Standard Curriculum for Primary Schools: Year 4 Design and Technology Curriculum and Assessment Standard Document] http://bpk.moe.gov.my/index.php/terbitan-bpk/kurikulum-sekolah-rendah/category/335-dskp-tahun-4?download=2881:dskp-kssr-semakan-2017-reka-bentuk-dan-teknologi-tahun-4

Ministry of Education Malaysia. (2019). *Kurikulum Standard Sekolah Rendah: Reka Bentuk dan Teknologi - Dokumen Standard Kurikulum dan Pentaksiran Tahun 5* [Standard Curriculum for Primary Schools: Year 5 Design and Technology Curriculum and Assessment Standard Document]. http://bpk.moe.gov.my/index.php/terbitan-bpk/kurikulum-sekolah-rendah/category/392-dskp-tahun-5?download=4495:dskp-kssr-semakan-2017-reka-bentuk-teknologi-tahun-5

Ministry of Education Malaysia. (2020). *Kurikulum Standard Sekolah Rendah: Bahasa Inggeris Sekolah Jenis Kebangsaan - Dokumen Standard Kurikulum dan Pentaksiran Tahun 5* [Standard Curriculum for Primary Schools: English Language (National-Type Schools) – Year 5 Curriculum and Assessment Standard Document]. http://bpk.moe.gov.my/index.php/terbitan-bpk/kurikulum-sekolah-rendah/category/392-dskp-tahun-5?download=3753:dskp-kssr-semakan-2017-bahasa-inggeris-sjk-tahun-5

Ministry of Education Malaysia. (2021). *Kurikulum Standard Sekolah Rendah: Reka Bentuk dan Teknologi - Dokumen Standard Kurikulum dan Pentaksiran Tahun 6* [Standard Curriculum for Primary Schools: Year 6 Design and Technology Curriculum and Assessment Standard Document] http://bpk.moe.gov.my/index.php/terbitan-bpk/kurikulum-sekolah-rendah/category/524-dskp-tahun-6?download=4697:dskp-kssr-semakan-2017-reka-bentuk-dan-teknologi-tahun-6

Ministry of Education Malaysia. (2022). *Kurikulum Standard Sekolah Rendah: Bahasa Inggeris Sekolah Jenis Kebangsaan - Dokumen Standard*

Kurikulum dan Pentaksiran Tahun 6 [Standard Curriculum for Primary Schools: English Language (National-Type Schools) – Year 6 Curriculum and Assessment Standard Document]. http://bpk.moe.gov.my/index.php/terbitan-bpk/kurikulum-sekolah-rendah/category/524-dskp-tahun-6?download=4742:dskp-kssr-semakan-2017-bahasa-inggeris-sjk-tahun-6

Mohamad, H., & Idrus, F. (2019). Written communication in entrepreneurship course in Malaysian vocational colleges: A qualitative inquiry. *International Journal of Education, Psychology and Counseling, 4*(33), 22-40. https://doi.org/10.35631/IJEPC.433003

Muñoz-Repiso, A. G.-V., Casillas Martín, S., & Basilotta Gómez-Pablos, V. M. (2020). Validation of an indicator model (INCODIES) for assessing student digital competence in basic education. *Journal of New Approaches in Educational Research, 9*(1), 110-125. https://doi.org/10.7821/naer.2020.1.459

Nasir, N. A. M., & Aziz, A. A. (2020). Implementing student-centered collaborative learning when teaching productive skills in an ESL primary classroom. *International Journal of Publication and Social Studies, 5*(1), 44-54. https://doi.org/10.18488/journal.135.2020.51.44.54

Nasrudin, N., & Othman, N. (2012). Evaluation of polytechnic entrepreneurship programs in Malaysia. *International Journal of Trade, Economics and Finance, 3*(5), 356-362. https://doi.org/10.7763/IJTEF.2012.V3.227

Nijat, N., Atifnigar, H., Chandran, K., Selvan, S. L. T., & Subramonie, V. (2019). Psychological factors that affect English speaking performance among Malaysian primary school pupils. *American International Journal of Education and Linguistics Research, 2*(2), 55-68. https://doi.org/10.46545/aijelr.v2i2.117

Novak, M. (2022). Netiquette and digital empathy in the context of applying cross-curricular

topics in the contemporary education. In L. Luic, I. Martincevic, & V. Sesar (Eds.), *83rd International Scientific Conference on Economic and Social Development - "Green Marketing"* (pp. 146-153). Varazdin Development and Entrepreneurship Agency. https://www.esd-conference.com/upload/book_of_proceedings/Book_of_Proceedings_esdVarazdin2022_Online.pdf

Palmer, D. J., Stough, L. M., Burdenski, J. T. K., & Gonzales, M. (2005). Identifying teacher expertise: An examination of researchers' decision making. *Educational Psychologist, 40*(1), 13-25. htttps://doi.org/10.1207/s15326985ep4001_2

Rahim, H. L., Abdul Kadir, M. A. B., Abidin, Z. Z., Junid, J., Kamaruddin, L. M., Lajin, N. F. M., Buyong, S. Z., & Bakri, A. A. (2015). Entrepreneurship education in Malaysia: A critical review. *Journal of Technology Management and Business, 2*(2).

Rasiah, R., Somasundram, S., & Tee, K. P. (2019). Entrepreneurship in education: Innovations in higher education to promote experiential learning and develop future ready entrepreneurial graduates. *Journal of Engineering Science and Technology, 6*, 99-110.

Rațiu, A., Maniu, I., & Pop, E. L. (2023). EntreComp framework: A bibliometric review and research trends. *Sustainability, 15*(2), Article 1285. https://doi.org/10.3390/su15021285

Ray, D. M. (1993). Understanding the entrepreneur: Entrepreneurial attributes, experience and skills. *Entrepreneurship and Regional Development, 5*(4), 345-358. https://doi.org/10.1080/08985629300000022

Roulet, T. (2015). "What good is Wall Street?" Institutional contradiction and the diffusion of the stigma over the finance industry. *Journal of Business Ethics, 130*(2), 389-402. https://doi.org/10.1007/s10551-014-2237-1

Sánchez-Hernández, M. I., & Maldonado-Briegas, J. J. (2023). The EntreComp framework in practice: A case study linking employability, entrepreneurship, and regional development. *Sustainability, 15*(15), Article 12022. https://doi.org/10.3390/su151512022

Sarwat, S., Ullah, N., Anjum, H. M. S., & Bhuttah, T. M. (2021). Problems and factors affecting students English writing skills at elementary level. *Ilkogretim Online - Elementary Education Online, 20*(5), 3079-3086.

Sawatzki, C., & Goos, M. (2018). Cost, price and profit: What influences students' decisions about fundraising? *Mathematics Education Research Journal, 30*(4), 525-544. https://doi.org/10.1007/s13394-018-0241-y

Scuotto, V., & Morellato, M. (2013). Entrepreneurial knowledge and digital competence: Keys for success of student entrepreneurship. *Journal of the Knowledge Economy, 4*(3), 293-303. https://doi.org/10.1007/s13132-013-0155-6

Seikkula-Leino, J., Salomaa, M., Jónsdóttir, S. R., McCallum, E., & Israel, H. (2021). EU policies driving entrepreneurial competences—Reflections from the case of EntreComp. *Sustainability, 13*(15), Article 8178. https://doi.org/10.3390/su13158178

Spartz, J. M., & Weber, R. P. (2015). Writing entrepreneurs: A survey of attitudes, habits, skills, and genres. *Journal of Business and Technical Communication, 29*(4), 428-455. https://doi.org/10.1177/1050651915588145

Studdard, N. L., Dawson, M., & Jackson, N. L. (2013). Fostering entrepreneurship and building entrepreneurial self-efficacy in primary and secondary education *Creative and Knowledge Society, 3*(2), 1-14.

Suryanti, Arifin, I. S. Z., & Baginda, U. (2018). The application of inquiry learning to train critical thinking skills on light material of primary

school students. *Journal of Physics: Conference Series, 1108*(1), Article 012128. https://doi.org/10.1088/1742-6596/1108/1/012128

Talukder, S. C., Lakner, Z., & Temesi, Á. (2024). Development and state of the art of entrepreneurship education: A bibliometric review. *Education Sciences, 14*(3), Article 295. https://doi.org/10.3390/educsci14030295

Taylor, E. (2021). Using online genres to promote students' audience awareness. *Journal on Empowering Teaching Excellence, 5*(2), Article 4. https://doi.org/10.26077/ac79-ce31

Teoh, W. M. Y., & Chong, S. C. (2014). Towards strengthening the development of women entrepreneurship in Malaysia. *Gender in Management: An International Journal, 29*(7), 432-453. https://doi.org/10.1108/GM-10-2013-0122

Vo, D., & Csapó, B. (2022). Measuring inductive reasoning in school contexts: A review of instruments and predictors. *International Journal of Innovation and Learning, 31*(4), 506-525. https://doi.org/10.1504/IJIL.2022.10046982

Weicht, R., Ivanova, I., & Gikopoulou, O. (2020). The CRADLE teaching methodology: Developing foreign language and entrepreneurial skills in primary school pupils. *Entrepreneurship Education, 3*(3), 265-285. https://doi.org/10.1007/s41959-020-00036-2

Yalap, O., Polatçı, S., & Yılmaz, H. (2020). Do psychological capital and communication skills affect entrepreneurial intention? *Global Journal of Business, Economics and Management: Current Issues, 10*(1), 21-30. https://doi.org/10.18844/gjbem.v10i1.4540

Yaman, M. N., Kamarudin, M. A., Besar, M. N. A., Bujang, S. M., Salam, A., Siraj, H. H., & Mohamad, N. (2014). Students' acceptance towards entrepreneurship module at Universiti Kebangsaan Malaysia. *Education in Medicine Journal, 6*(4), e87-e90. https://doi.org/10.5959/eimj.v6i4.312

Zupan, B., Cankar, F., & Cankar, S. S. (2018). The development of an entrepreneurial mindset in primary education. *European Journal of Education, 53*(3), 427-439. https://doi.org/10.1111/ejed.12293

APPENDIX

Interview Protocol for Needs Analysis

I am a PhD program candidate at the Faculty of Education, University of Malaya, and I am currently conducting a study on the development of an entrepreneurial persuasive communication module for primary school learners, supervised by Associate Professor Dr. Norlidah Alias and Associate Professor Dr. Dorothy Dewitt. First, thank you for your willingness to take part in this study. Your participation in this needs analysis interview session will help me capture the needs of entrepreneurial competencies and essential persuasive communication skills of primary schoolers based on the gap between the desired and the actual situations. The interview session aims to answer the following questions:

Research Question 1: What are the components of entrepreneurial persuasive communication in the current curriculum?

Research Question 2: What elements of persuasive entrepreneurial communication are needed?

This interview session will take about 30 minutes, and you will answer questions about the teaching practice in primary schools, your current teaching practice, your perceptions of pupils' abilities, existing entrepreneurial persuasive communication skills training in school and some challenges you faced in teaching. For your information, your response to the interview questions is completely confidential, and your identity will remain anonymous. All the information collected from the interview session will only be used for this dissertation. You can also withdraw your consent or any unprocessed data provided.

1. Current teaching practice
   a. How are lessons usually conducted in the primary school context?
   b. How do you prepare before your lessons?
   c. How is class carried out in terms of:
      - Content
      - Instructional strategies
      - Activities
      - Resources and materials
      - Evaluation methods

2. Teaching of Entrepreneurship in Bahasa Malaysia/ English/ Design and Technology
   a. Do you think primary school pupils can **think** in an entrepreneurial manner? Why do you think so?
   b. Do you think primary school pupils can **communicate** persuasively? Why do you think so?
   c. Can you suggest ways to promote **entrepreneurship skills** among primary school pupils? Which of these are practiced in your class?

    d. Can you suggest ways to promote **persuasive communication skills** among primary school pupils? Which of these are practiced in your class?

    e. Can you tell me how you teach **entrepreneurship skills** among primary school pupils? What kind of task do you give? Can you give some examples? Where do you get the inspiration for the tasks from (past experiences or industrial experience)?

    f. How do you teach **persuasive communication skills** among primary school pupils? What kind of task do you give? Can you give some examples? Where do you get the inspiration for the tasks from (past experiences or industrial experience)?

    g. What are the tools that you use in your teaching? How do you use them? Are those tools being used in teaching **entrepreneurship** communication? Can you provide more information in your context?

    h. What are the tools that you use in your teaching? How do you use them? Are those tools being used in teaching **persuasive communication** skills? Can you provide more information in your context?

    i. Does your teaching in **entrepreneurship skills** meet future industrial needs? Can you elaborate more on that?

    j. Does your teaching in **persuasive communication skills** meet future industrial needs? Can you elaborate more on that?

3. What skills do pupils have?

    a. What **entrepreneurship skills** do your pupils already have and do not have?

    b. What **persuasive communication skills** do your pupils already have and do not have?

    c. What **persuasive communication skills** does society need to be successful in the future?

    d Think of what skills are required for pupils wanting to start a business and stay ahead of the game.

    e. Think of what skills are required for pupils to influence others.

    f. Will these **entrepreneurship skills** be used daily?

    g. Will these **persuasive communication skills** be used on a daily basis?

    h. Can you explain why these entrepreneurship skills are valuable and necessary?

    i. Can you explain why these persuasive skills are valuable and necessary?

    j. If these skills are not learned, how will they impact society?

    k. Are these skills necessary to meet the challenges of Industry 4.0?

    l. What challenges might your pupils face when learning the new skills?

4. Former entrepreneurial communication training in school
   a. Has any training been done for these particular skills?
   b. Were former training programs successful?
   c. How were training evaluation methods done?
   d. How accessible was training for all pupils?

5. Challenges
   a. What are the challenges that you encounter in teaching pupils entrepreneurship and communication skills?
   b. Have you ever been trained to teach entrepreneurial communication? What kind of training is needed? If yes, what was taught in the training? Do you apply what you learned from the training to your teaching practice? How?
   c. If you have never received any training in teaching entrepreneurial communication, what kind of training do you think you need? Can you describe more? What are the tools that you need?

Thank you so much for your response.

Review Article

Bibliometric Analysis of Trends in Research on Communication Apprehension

Marcus Gee-Whai Kho[1]* and Su-Hie Ting[2]

[1]*Department of General Studies, Politeknik Kuching Sarawak, 93050 Kuching, Sarawak, Malaysia*
[2]*Faculty of Education, Language and Communication, Universiti Malaysia Sarawak, 94300 Kota Samarahan, Sarawak, Malaysia*

ABSTRACT

The bibliometric analysis examined communication apprehension (CA) research trends by analysing 204 articles from the Scopus database published between 2013 and 2022. There was a substantial increase in CA publications after 2021, following a period of stability from 2017 to 2020. The majority of the publications were in English. Most of the publications on CA are in the social sciences. Transdisciplinary studies are on the rise, with researchers investigating CA in computer-mediated communication in online settings and different cultures. Universiti Teknologi Malaysia was at the forefront of university contributions, while the United States had a dominant position on a global scale. The network map shows collaboration between scholars from the United States, Malaysia, Turkey, Thailand, and Taiwan. McCroskey and Richmond are leading researchers in CA, while Arquero is inclined towards co-publications. CA research is most frequently published in PLOS One, Communication Education, and Computers in Human Behaviour. Constraints encompassed dependence on Scopus, restricted search words, and difficulties with citation analysis. Subsequent investigations should utilise a variety of methodologies and databases and concentrate on implementing interventions and longitudinal studies on CA.

Keywords: Bibliometric analysis, citation counts, communication apprehension, publication trend, Scopus database

INTRODUCTION

Communication apprehension (CA) refers to an individual's emotional discomfort or anxiety associated with interacting with others (McCroskey, 1982, 1984). McCroskey (1977) pioneered the investigation of CA in public speaking, while other researchers investigated how CA adversely influences

social skills and self-esteem (Horowitz, 2002). High levels of CA are linked to negative personal characteristics, such as low emotional maturity and tolerance for ambiguity (Richmond & McCroskey, 1998). Elevated CA can hinder students' academic achievement, contributing to cognitive impairments, subpar performance, and higher school and workplace disengagement rates. (Blume et al., 2013; McCroskey, 1977).

CA is a psychological state characterised by fear or worry experienced during verbal, auditory, and social interactions (Beatty & Gonzalez, 2020; McCroskey, 2009; Cavanaugh, 2013). This apprehension can manifest in various ways, including physiological symptoms, such as perspiration, tremors, an accelerated heartbeat, and psychological feelings of humiliation or exclusion (Agrawal & Krishna, 2021). In the middle of the mid-20th century, James McCroskey pioneered the concept in the 1960s and 1970s. The theoretical advancements developed to comprehend the factors contributing to CA include the Personal Report of Communication Apprehension (PRCA) scale, a popular tool for evaluating levels of CA (Hashemi et al., 2020).

The development of CA can be associated with genetic and environmental influences, including family communication patterns and past adverse experiences (Hsu, 2009; Stahrfisher, 2013). The effects of CA on communication have been extensively examined, such as investigations on how CA can hinder communication effectiveness in numerous settings, namely, public

speaking, group discussion, and individual interaction. Research indicates that when CA increases, academic performance decreases, particularly in oral presentations, where increased CA correlates with lower academic performance (McCroskey, 1977; McCroskey & Andersen, 1976). Coping strategies for managing CA involve relaxation techniques, desensitisation through exposure, and communication skill acquisition through training (Mardesich, 2023). Cross-cultural studies have also explored variations in CA across various cultures, which discovered that cultural norms and communication methods substantially impact individuals' anxiety levels (Chen, 2019; Hofmann & Hinton, 2014; Lim, 2016). Recent research has explored CA within the realm of Computer-Mediated Communication (CMC), driven by the growing use of technology and new digital communication platforms (Carr, 2020; Shimada & Hideshima, 2023).

CA research has developed over the past four decades from the fear of public speaking and reticence in the academic setting to other contexts. Recent research has examined how CA influences interpersonal relationships and group dynamics (Campbell, 2012; McCroskey, 2009). For instance, CA results in poor interprofessional communication with patients (Tahir et al., 2017). Despite the multiple peer-reviewed articles, books, and dissertations on CA, the publications have not identified over-studied areas and angles that require further investigation.

The present study examined the publication trends on CA using bibliometric

analysis. The following research questions guided the analysis:

(a) How did research on CA develop, and how was it disseminated?

(b) What are the main topics discussed in the research on CA?

(c) Who are the key researchers in the field of CA, and how did they collaborate?

A bibliometric analysis brings together the findings of various studies on CA and can show the research trends on CA. Bibliometric analysis is a research approach that compiles and expands knowledge on a particular topic by mapping the relationships among key publications, authors, institutions, themes, and other relevant factors within the discipline (Gumpenberger et al., 2012; Vogel, 2014). Frequency distributions and "word clouds" are generated to assess the significance of a specific topic by examining the most commonly occurring keywords in the literature related to CA (de Oliveira et al., 2019).

LITERATURE REVIEW

Communication Apprehension

Communication, the process of conveying information, messages, or ideas between individuals, is essential to human interaction (Heath & Bryant, 2000). Effective communication plays a crucial role in shaping an individual's self-image, as those who communicate effectively often receive favourable feedback and acknowledgement (Nelson, 2011). This process involves various elements, including information sources and the collaboration between

senders and receivers, to ensure a successful exchange of information (Barker, 2010).

Communication can be classified into verbal and non-verbal interactions. Verbal communication involves spoken language, while non-verbal communication encompasses body movements, gestures, tone of voice, and facial expressions, which enhance verbal messages (Bhardwaj, 2008; Lindh et al., 2009). Non-verbal communication is particularly vital, with social anthropologists estimating that it constitutes approximately 60% of all public communication (Barker, 2010; Fiske, 2002; Heath & Bryant, 2000). Both verbal and non-verbal communication are essential in conveying messages effectively and fostering social connections.

A key obstacle to effective communication is CA, also referred to as communication anxiety (McCroskey, 1977; Rimkeeratikul, 2023; Sawyer, 2018). McCroskey (1977) defines CA as the anxiety or fear experienced during actual or anticipated communication. CA can arise in various contexts, from public speaking to one-on-one interactions (West & Turner, 2008). CA is a widespread phenomenon affecting individuals of different ages, genders, and backgrounds (Sellnow, 2005). Factors that contribute to CA include the communication context (e.g., audience, physical setting), individual attributes (e.g., personality, self-esteem, communication skills), and cultural influences (Weiten et al., 2009).

McCroskey (1970) developed the Communication Apprehension Theory (CAT) to explain the anxiety individuals

experience when interacting with others. CA is a trait-based form of anxiety that influences an individual's tendency and capacity for oral communication. McCroskey identifies four distinct types of CA: trait-related, contextual, audience-related, and situational anxiety. Trait-related CA means that CA is influenced by an individual's personality and is rather stable across settings, situations and interactions (McCroskey, 1970). Individuals with high levels of trait-related CA experience ongoing anxiety in nearly all communication scenarios, both formal public speaking and informal conversations, and is not easy to overcome.

Unlike trait-related CA, contextual CA is associated with particular situations or settings, such as public speaking, one-on-one interactions, group discussions, meetings, and interpersonal conversations (McCroskey & Beatty, 1984). The level of contextual CA drops once an individual exits a particular situation. McCroskey (1984) considers contextual CA to be related to personality and rather stable in anxiety-triggering situations. A situation that often gives rise to higher contextual CA is public speaking.

Audience-related CA is triggered by interactions with specific individuals or groups, particularly audiences with high authority and expertise and a distant relationship to the speaker (Neuliep & McCroskey, 1997). The intensity of this anxiety fluctuates based on the audience, independent of the context. For instance, a person might be comfortable speaking in a familiar classroom but feel nervous when addressing an unfamiliar group.

Situational CA arises from specific conditions or factors within a communication setting, such as familiarity with the audience, perceived significance of the event, or time constraints (Beatty et al., 1998). Unlike trait, contextual, or audience-related CA, situational CA is temporary and fluctuates depending on the particular circumstances of the communication event. McCroskey (1997) posits that situational CA occurs at a specific point on the continuum of CA and represents anxiety experienced with a specific person or group, at a specific time, and in a specific setting. Situational CA typically occurs in stressful situations, such as being called into a professor's office on suspicion of cheating or having to testify in court, emphasising the impact of specific situational factors on CA.

Understanding the different types of CA—trait-related, contextual, audience-related, and situational—allows for a more comprehensive understanding of human communication. By recognising and addressing these different forms of CA, researchers and practitioners can develop more effective strategies to mitigate its effects.

CA also varies by type of communication. Public speaking anxiety involves increased nervousness when addressing an audience because of fear of being judged or making mistakes (Richmond & McCroskey, 1998). Interpersonal CA refers to anxiety during direct interactions with one or a few people, often due to fear of negative evaluation or conflict (Daly, 1978). Group CA arises during team meetings or joint endeavours

and is influenced by the evaluation of the group and nuances of engagement (Leary, 1983). Communication channel apprehension is the discomfort associated with certain communication media, such as written correspondence, telephone conversations, or digital platforms, such as email and social media (Spector & Jex, 1998).

The effects of increased oral CA extend to personal and professional domains, limiting career advancement and hindering academic outcomes that centre on oral discourse (McCroskey, 1984; Richmond & McCroskey, 2000). McCroskey (1984) identifies four typical characteristics of CA: internal discomfort, communication avoidance, communicative interference, and excessive communication. Ka-kan-dee and Al-Shaibani (2018) state that CA manifests as reticence, shyness, nervousness and discomfort when speaking. This broader view of CA highlights the different ways in which people experience and display anxiety in communicative situations, whether in public speaking or private contexts.

Studies have shown the importance of addressing CA in educational and professional contexts. Radzuan and Kaur (2016) examined the communication skills of engineering students and emphasised the need to address CA when teaching oral presentation skills. Mahoney et al. (2017) showed that blended learning methods can alleviate CA in public speaking. Naser and Isa (2021) found that even academically outstanding students struggle with increased public speaking anxiety. Valls-Ratés et al. (2022) emphasised the promising effect

of virtual reality (VR) in combating CA and improving public speaking skills. Rimkeeratikul (2023) suggests that diagnosing CA in students allows teachers to provide appropriate support.

To summarise, oral CA occurs in both private and professional settings. Managing CA, especially in public speaking and presentations, is crucial for academic and professional success. Strategies ranging from cognitive techniques to innovative pedagogical methods show promise in mitigating the effects of CA and improving communication skills.

METHODOLOGY

The systematic literature review is guided by the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) standards based on Zakaria et al.'s (2021) methodology. The current study used the Scopus index for data extraction and document collection, with 11 January 2023 as the reference date. The extensive inclusion of high-ranking journals from multiple disciplines has established Scopus as the preferred source for such analyses (Ahmi & Mohd, 2019; Kolle et al., 2018; Sweileh, 2018, cited in Lam & Habil, 2021). Figure 1 shows the steps followed to compile the corpus for the bibliometric analysis.

Criteria for Obtaining Articles

The inclusion criteria included articles published in 2013-2022 on CA in different contexts, such as public speaking, intercultural communication, and online

communication. The search focussed on articles where "CA" was present in the keywords, abstract or title. This approach was important to maintain the dataset's relevance and exclude tangentially related articles that do not directly contribute to the understanding of CA.

Validation Process

The validation process began with screening the initial search result (N = 204) based on titles and abstracts, and no articles were removed (n = 0). A thorough review of the full text of the selected articles (*n* = 204) was conducted to confirm their relevance to
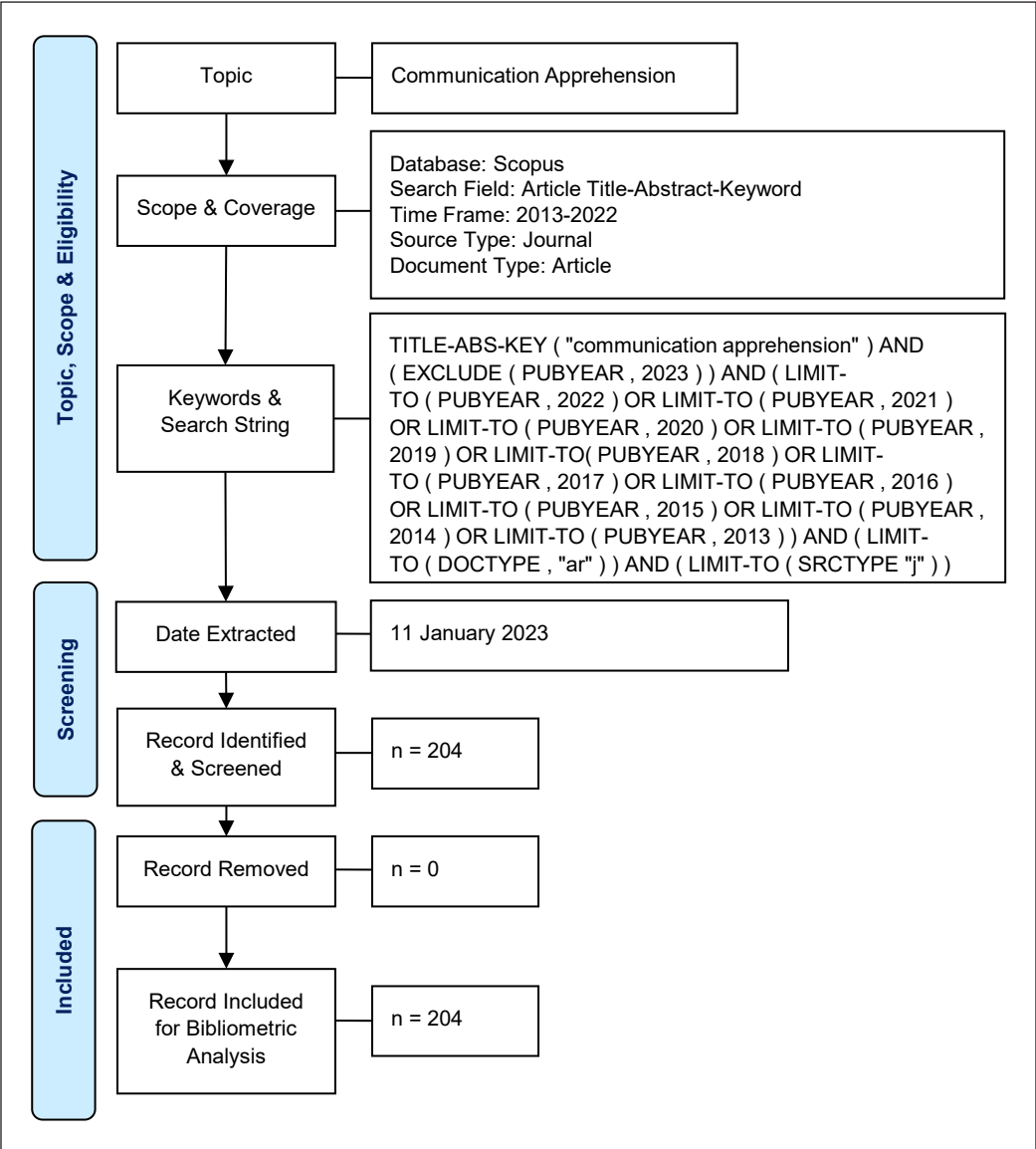
Figure 1. Steps followed to compile the corpus for the bibliometric analysis

CA research and to exclude those that, on closer inspection, did not fulfil the inclusion criteria. Several benchmarking methods were applied to the selected articles to ensure consistency and quality. Each article was assessed for its direct relevance to CA research, excluding articles with tangential references. Articles were categorised based on their research focus, including empirical studies, theoretical papers, reviews and case studies. This categorisation ensures a balanced representation of different research approaches within the dataset. Metadata such as author names, year of publication and journal names were correctly recorded. The selection and categorisation process was revisited and validated to ensure consistency and reduce potential bias. This step was critical to maintaining the integrity and objectivity of the selection process. The final data set was meticulously checked for accuracy. This involved ensuring that each article was correctly categorised and that this verification step was important to ensure the reliability and validity of the bibliometric analysis.

The data in the Excel files were exported using the Research Information Systems (RIS) and Comma-Separated Values (CSV) formats as dataset components. Harzing's Publish or Perish programme also calculated citation metrics and other rates. In addition, VOSviewer, an accessible tool for constructing and visualising these networks, was used to visually represent the bibliometric networks (Ahmi & Mohd, 2019). A mere count of publications does not adequately reflect their scholarly impact. Instead, the number of citations (a metric that reflects the usefulness of a publication to other researchers) is a more accurate measure of an author's research and global impact (Lam & Habil, 2021). The analysis included numerous dimensions when examining publications on CA, such as linguistic characteristics, thematic areas, annual research patterns, major nations, academic institutions, and scholarly journals. The data from the databases were mainly presented as percentages and frequencies. In addition, using VOSviewer enabled the application of sophisticated visualisation techniques that enhanced the understanding of the relationships between authors' keywords, citations by nation, co-authorship and co-citations.

RESULTS AND DISCUSSION

Development and Dissemination of Research on CA

Most publications on CA (96.57%) were in English (Table 1). The prevalence of English as the primary communication language in the academic sphere indicates that scholars are inclined to disseminate their research in English to enhance the accessibility and visibility of their work within the global research community. Table 1 presents the percentage of publications on CA across different languages. Carpenter et al. (2014) stated that compiling a list of the languages used in cited articles can disclose national and international influence.

Non-English CA publications, such as Chinese, Russian, Spanish, Bosnian, and Polish, suggest that researchers from non-

Table 1
Percentage of publications on CA in various languages (N = 206)

Language	Total Publications	Percentage (%)
English	197	96.57
Chinese	3	1.47
Russian	2	0.98
Spanish	2	0.98
Bosnian	1	0.49
Polish	1	0.49
Total	**206**	**100.00**

Note. One document was published in two languages, contributing to the total publication count

mainstream regions published their findings in local journals. They may lack the proficiency to publish in English language journals. Their findings may not be accessed and cited by other CA researchers, which means that their publications have little impact on the worldwide direction of research in the field of CA. This study underscores the significant collaborative efforts among academics from the United States, Malaysia, Turkey, Thailand, and Taiwan. The rationale behind these collaborations is geographic proximity, shared research focus areas, funding and resource sharing, and language and cultural factors. Geographic proximity enhances collaboration possibilities as researchers near each other can benefit from in-person gatherings, conferences, and joint initiatives. Shared research focus areas can lead to collaborative endeavours as they often exhibit a collective interest in specific facets of Computer-Mediated Communication (CMC), such as its impact on cross-cultural interactions or its implications for online discourse. International collaborations usually provide academics access to inaccessible financial options within their

countries, facilitating information sharing and the development of more complete studies. Adopting collaborative research approaches that consider cultural and linguistic varieties and the consequences of cross-cultural communication can enhance global relevance and offer valuable insights for interventions and strategies to address cultural adaptation in multicultural and diverse settings.

Interest in CA has increased from 2021 onwards, and based on total publications (TP), it is likely to increase further (Figure 2). Nonetheless, as indicated by the orange line in Figure 2, there has been no corresponding increase in citations of the publications (TC) since 2017. Citations are slow in the field of CA.

Table 2 lists the frequency of CA research publications by year and shows that interest in CA research is growing. The total number of publications (TP) ranged from 10 to 31 per year. The total number of publications on CA in 2013 was 20, which decreased before stabilising to a total of 20 to 21 in 2017 to 2020. Since 2013, the most publications on CA are in
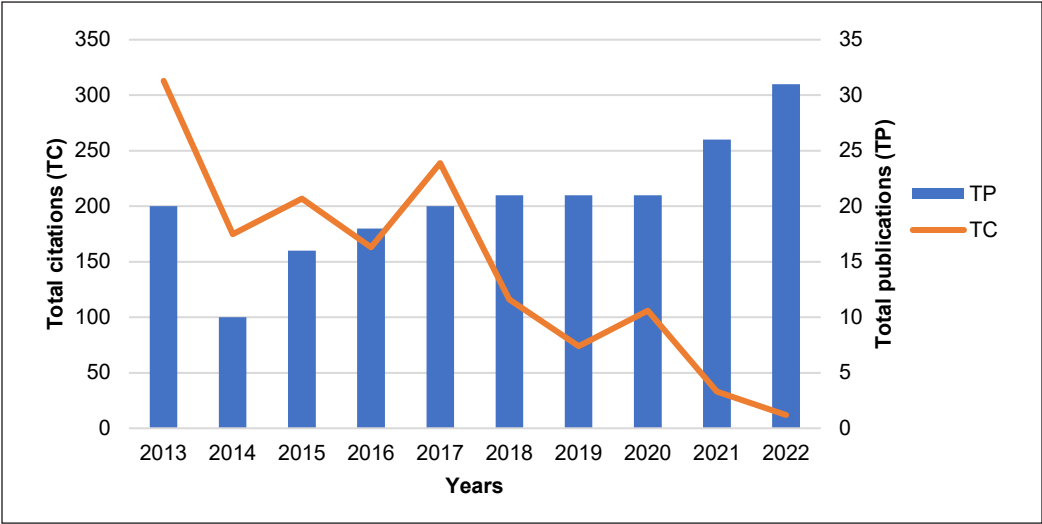
Figure 2. Citations and publications by year

Table 2
Frequency of publication (CA) by year (N = 204)

Year	TP	NCP	TC	PCP	CCP	*h*	*g*
2013	20	20	313	15.65	15.65	11	17
2014	10	8	175	17.50	21.88	7	10
2015	16	14	207	12.94	14.79	7	14
2016	18	16	163	9.06	10.19	7	12
2017	20	18	239	11.95	13.28	7	15
2018	21	19	116	5.52	6.11	7	9
2019	21	17	74	3.52	4.35	6	7
2020	21	19	106	5.05	5.58	6	9
2021	26	11	33	1.27	3.00	4	5
2022	31	7	12	0.39	1.71	2	2
Total	204						

Note. TP = total number of publications; NCP = number of cited publications; TC = total citations; PCP = proportion of cited publications; CCP = citations per cited publication; *h* = *h*-index; and *g* = g-index

2022 (31 publications), an increase from 26 in 2021. There is further evidence that citations in the field of CA are slow. The percentage of cited publications (PCP) and the number of citations per cited publication (CCP) declined from 2013 to 2022, which indicates that older publications in the field tend to gain more visibility and citations. CA articles published in 2014 have an exceptionally high PCP and CCP despite the small number of total publications because of the interest in Hammick and Lee's (2014) paper on whether shy people feel less CA online. However, the field of CA generally

has moderate research productivity and influence (g-index of 2–17).

Key Topic Areas in CA Research

Table 3 shows the citation networks of the subject areas where results on CA were published, where 72.06% are in social science journals, followed by arts and humanities (28.43%). The keyword co-occurrence analysis denotes that the scope of CA research primarily concerns teaching and learning. Notably, researchers from the sciences have also investigated CA, indicating the field's potential to benefit from multidisciplinary perspectives.

The bibliometric analysis of publications on CA between 2013 and 2022 shows that researchers study CA in online communication because technological advancements in the digital age, such as virtual reality (VR) and augmented reality (AR), have established new research domains. Educational transformations, such as the rise of online learning platforms and technology integration, have affected CA experienced by students. With increased cross-cultural connections facilitated by globalisation and international mobility, researchers are beginning to understand cultural differences in CA. Multidisciplinary

Table 3

The subject area of CA publications

Subject Area	Total Publications (TP)	Percentage (%)
Social Sciences	147	72.06
Arts and Humanities	58	28.43
Psychology	40	19.61
Business, Management, and Accounting	23	11.27
Medicine	21	10.29
Computer Science	15	7.35
Engineering	13	6.37
Economics, Econometrics, and Finance	9	4.41
Health Professions	8	3.92
Biochemistry, Genetics, and Molecular Biology	6	2.94
Nursing	6	2.94
Pharmacology, Toxicology, and Pharmaceutics	5	2.45
Agricultural and Biological Sciences	3	1.47
Environmental Science	3	1.47
Multidisciplinary	3	1.47
Neuroscience	3	1.47
Chemical Engineering	2	0.98
Energy	2	0.98
Mathematics	2	0.98
Decision Sciences	1	0.49
Veterinary	1	0.49

research on CA has also been conducted, integrating perspectives from numerous disciplines, namely psychology, education, linguistics, and cultural studies.

Figure 3 depicts the author's interpretation of a keyword network where each keyword occurred at least three times in the literature. Only 35 of the 587 keywords fulfilled the specified condition. Additionally, the magnitude of each circle corresponds to the number of publications from a particular country. CA is the largest node in the blue network, which is expected considering that "CA" was one of the search phrases used. The analysis suggested that CA is closely linked to anxiety (purple circle) and communication (red circle), which usually co-occur in publications. The distance of intercultural communication and foreign language apprehension from the CA node reflects less research in these areas. Nevertheless, these topics may develop in prominence due to the increasing international movement of students and

workers, which raises communication across cultures. CA is an obstacle for language learners in gaining communicative competence.

Main Contributors to CA Research

The examination of academic collaboration within the CA domain primarily centred around several crucial aspects: (1) the identification of leading authors in publications based on their place of origin, (2) the determination of the most significant institutions involved in this area, (3) the assessment of the most actively utilised journals, (4) the study of citations, and (5) the evaluation of authorship patterns.

The network visualisation map in Figure 4 illustrates the co-occurrence of nations based on the authors' affiliation. All countries contributed to a minimum of three publications. The abovementioned requirement was satisfied by 11 countries, represented as nodes in the map. The patterns of nodes are established by the
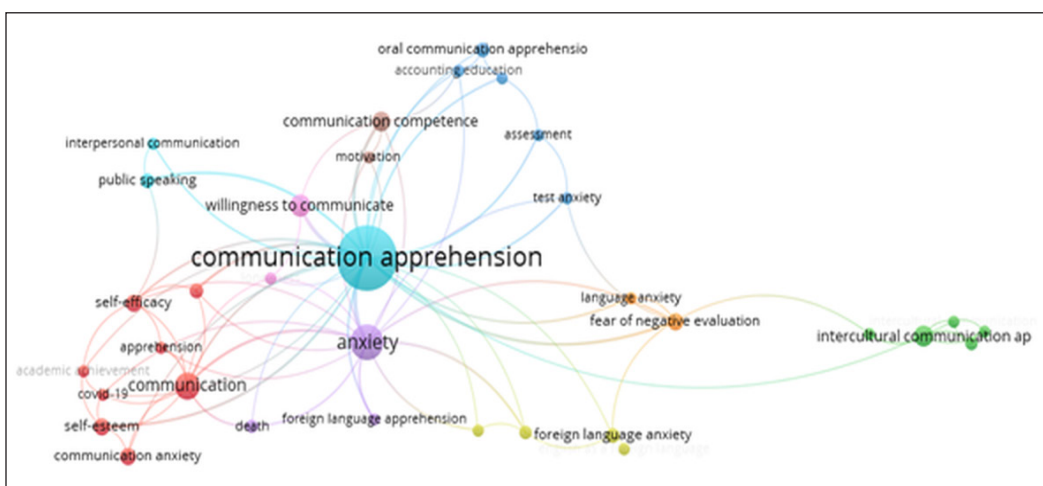
Figure 3. Network visualisation map based on author keyword
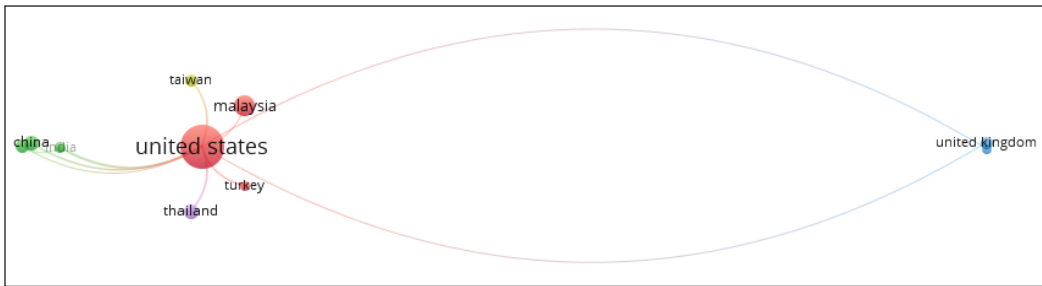
Figure 4. Network visualisation map of the citation based on different countries
Note. Minimum of five documents and five citations of an author

thickness of lines, circle and text size, and colour. MacDonald and Dressler (2018) suggested that a larger node size usually co-occurs with greater "total link strength" and more citations. The proximity of the nodes also indicates a significant correlation between the content of the articles.

The United States (red node) has the highest publications on CA. A considerable geographical separation exists between the United Kingdom and other nations, reflecting little collaboration of UK researchers with those from other countries. The geographical proximity of Malaysia, Turkey, Thailand, and Taiwan to the United States is probably because academics from these countries pursued postgraduate studies in the United States and continued to publish with their supervisors after they graduated.

Table 4 reveals that the highest CA contributions were from the United States (85 publications; *h*-index of 16; g-index of 25). Out of the 85 publications, 72 (9.96%) were cited 847 times (TC), with each paper being cited 12 times on average (CCP, 11.67). CA research in other countries has less influence on the field based on the frequency of citations. Although researchers in Malaysia have actively published on CA (19 publications), only 12 (or 2.79%) of the publications were cited 53 times (TC). Each paper was cited four times on average (CCP, 4.42). Malaysian researchers may not gain as much visibility by publishing with researchers in the United States (CCP of 11.76) compared to other countries. They may have low total publications (TP), but their papers are more highly cited than those from the United States: Australia (38.33), Turkey (18.33), Saudi Arabia (15), and Spain (13).

Further investigation of the main contributors to CA research identified the most influential institutions (Table 5). The evaluation took into account the number of publications cited, total citations, the proportion of publications cited, citations per publication cited, h-index, and g-index. Universiti Teknologi Malaysia has the most publications (TP of 6). Nonetheless, only two were cited. There were only three total citations (TC), while the CCP was 1.5. Researchers from three other universities produced four publications, each from 2013 to 2022, namely, Texas Tech University

Table 4
Top countries contributing to the publications

Country	TP	NCP	TC	PCP	CCP	*h*	*g*
USA	85	72	847	9.96	11.76	16	25
Malaysia	19	12	53	2.79	4.42	5	6
China	9	4	19	2.11	4.75	2	4
Thailand	9	6	36	4.00	6.00	2	6
Saudi Arabia	8	4	60	7.50	15.00	3	7
Taiwan	7	6	30	4.29	5.00	4	5
UK	7	6	54	7.71	9.00	4	7
India	6	4	14	2.33	3.50	2	3
Iran	6	3	10	1.67	3.33	2	3
Spain	5	5	65	13.00	13.00	4	5
Turkey	5	3	55	11.00	18.33	2	5
Canada	4	2	7	1.75	3.50	2	2
Finland	4	4	32	8.00	8.00	3	4
South Korea	4	3	7	1.75	2.33	2	2
Australia	3	3	115	38.33	38.33	3	3
Indonesia	3	1	6	2.00	6.00	1	2
Jordan	3	1	4	1.33	4.00	1	2
New Zealand	3	2	10	3.33	5.00	2	3
Poland	3	3	4	1.33	1.33	1	1
UAE	3	2	4	1.33	2.00	1	2

Note. Total number of publications (TP); Number of cited publications (NCP); Total citations (TC); Proportion of cited publications (PCP); Citations per cited publication (CCP); h-index (h); and g-index (h)

(United States), University of Jyväskylä (Finland), and Universidad de Sevilla (Spain).

All other institutions listed in Table 6 produced only three publications. Although Universiti Teknologi Malaysia produced more publications, the United States contributed the most to developments in CA, as demonstrated by the CCP exceeding 10 for Texas Tech University, SUNY New Paltz, The University of Tennessee, Knoxville, and West Virginia University. Universidad de Sevilla (Spain) and Sheffield Hallam University (United Kingdom) are also worth mentioning. A comparison with

Table 5 reveals that although publications from Australia had high citations per cited publication (CCP of 38.33), no institution stood out as the centre of CA research.

The significant role of the United States in CA research is linked to historical and institutional circumstances, such as a well-developed academic infrastructure based on their esteemed universities, renowned research organisations, and accomplished researchers. James McCroskey coined the phrase "CA," and researchers widely used his scale for measuring CA. The academic setting in the United States also fosters a culture of collaboration and networking

Table 5
Top influential institutions

Affiliation	Country	TP	NCP	TC	PCP	CCP	*h*	*g*
Universiti Teknologi Malaysia	Malaysia	6	2	3	0.50	1.50	1	1
Texas Tech University	USA	4	4	69	17.25	17.25	3	4
University of Jyväskylä	Finland	4	4	32	8.00	8.00	3	4
Universidad de Sevilla	Spain	4	4	44	11.00	11.00	4	4
Birla Institute of Technology and Science, Pilani	India	3	2	2	0.67	1.00	1	1
SUNY New Paltz	USA	3	3	67	22.33	22.33	3	3
The University of Tennessee, Knoxville	USA	3	3	97	32.33	32.33	3	3
University of Kentucky	USA	3	1	2	0.67	2.00	1	1
University of Maryland, College Park	USA	3	3	23	7.67	7.67	2	3
West Virginia University	USA	3	2	42	14.00	21.00	2	3
The University of Alabama	USA	3	3	11	3.67	3.67	2	3
Michigan State University	USA	3	3	27	9.00	9.00	2	3
Sheffield Hallam University	UK	3	3	40	13.33	13.33	3	3
The University of Jordan	Jordan	3	1	4	1.33	4.00	1	2

Note. Total number of publications (TP); Number of cited publications (NCP); Total citations (TC); Proportion of cited publications (PCP); Citations per cited publication (CCP); h-index (h); and g-index (h)

(Scager et al., 2016; Valevskaya, 2019), which facilitates knowledge sharing and encourages multidisciplinary research, as Fan and Cai (2020) highlighted. Furthermore, numerous studies (Gaule & Piacentini, 2013; Hunt & Gauthier-Loiselle, 2010; Stuen et al., 2012) repeatedly emphasised that immigrants in the United States contributed disproportionately to research and innovation.

Researchers from Malaysia, Turkey, Thailand, and Taiwan to the United States often pursue higher education in the United States (Staddon, 2020), which promotes idea-sharing and fosters collaboration in CA research. They were subsequently published in English, strengthening the prevailing influence of the United States in academia (Shaw, 2013). The United

Kingdom researchers are not prolific in CA research. They tend to concentrate on specific areas of inquiry, which creates varying study interests and specialised expertise (Corner, 2019).

Table 6 displays that the most active journal contributing to CA studies was *Communication Education,* published by Taylor & Francis (8 publications, cited 96 times, SJR 2021 of 0.693, SNIP 2021 of 1.665). The second most active contribution was the *Asian EFL Journal* (five publications cited 10 times, SJR 2021 of 0.27, SNIP 2021 of 0.365). Other source titles published only three papers each from 2013 to 2022.

Communication Education is a prominent publication because it focuses on disseminating research that contributes to comprehending the significance of

Table 6
Most active journals

Source Title	TP	TC	Publisher	Cite Score	SJR 2021	SNIP 2021
Communication Education	8	96	Taylor & Francis	3	0.693	1.665
Asian EFL Journal	5	10	Asian EFL Journal Press	1	0.27	0.365
Communication Research Reports	3	6	Taylor & Francis	2.5	0.598	0.83
Computers In Human Behaviour	3	154	Elsevier	14.9	2.174	3.234
Health Communication	3	12	Taylor & Francis	5.6	1.103	1.853
International Journal of Applied Linguistics and English Literature	3	5	Australian International Academic Centre PTY. LTD	0.2	0.121	0
International Journal of Instruction	3	9	Gate Association for Teaching and Education	3.4	0.5	1.394
Journal of Intercultural Communication	3	10	University of Goteborg	0.6	0.132	0.307
Journal of International and Intercultural Communication	3	24	Taylor & Francis	2.5	0.398	0.959
Omega United States	3	15	SAGE	2.8	0.469	1.269
Personality and Individual Differences	3	32	Elsevier	5.3	11.78	1.685
PLOS One	3	99	Public Library of Science	5.6	0.852	1.368

Note. Total number of publications (TP); Total citations (TC)

communication within communication, teaching, and learning areas. Several subjects of interest in education include the dynamics of student-teacher interactions, the qualities exhibited by students and teachers, the effects on student learning outcomes, and the wider topics of diversity, inclusion, and difference.

However, CA publications in Computers in Human Behaviour get more visibility, evident in the high citations (Elsevier; TC of 154; Cite Score of 14.9) and *PLOS One* (Public Library of Science; TC of 99; Cite Score of 5.6). *Computers in Human Behaviour* addresses human interactions with computers and is generally not a source title that researchers in education or communication would seek. Nevertheless,

the journal is under the Elsevier group, contributing to its publications' visibility. Furthermore, Personality and Individual Differences (Elsevier) has a high TC of 32 despite publishing only three papers on CA from 2013 to 2022, with a cite score of 5.3.

Table 7 lists the 20 most cited articles on CA. The citation analysis shows that Hammick and Lee (2014) had the most significant impact on CA research (70 cites; 7.78 per year). Hammick and Lee (2014) were forerunners in examining the effect of virtual reality and personality characteristics on CA online, given that virtual reality was not a popular research topic yet in the 2010s. Articles 10, 14, and 15 in the list also concern CA, which excludes face-to-face situations.

Table 7

Top 20 highly cited articles on CA

No.	Authors	Title	Year	Cites	Cites per Year
1	J. K. Hammick, M. J. Lee	Do shy people feel less communication apprehension online? The effects of virtual reality on the relationship between personality characteristics and communication outcomes	2014	70	7.78
2	S. Erickson, S. Block	The social and communication impact of stuttering on adolescents and their families	2013	64	6.4
3	N. M. Punyanunt-Carter, J. J. De La Cruz, J. S. Wrench	Investigating the relationships among college students' satisfaction, addiction, needs, communication apprehension, motives, and uses and gratifications with Snapchat	2017	54	9
4	B. J. England, J. R. Brigati, E. E. Schussler	Student anxiety in introductory biology classrooms: Perceptions about active learning and persistence in the major	2017	52	8.67
5	F. Alrabai	The influence of teachers' anxiety-reducing strategies on learners' foreign language anxiety	2015	50	6.25
6	H. Öz, M. Demirezen, J. Pourfeiz	Willingness to communicate with EFL learners in a Turkish context	2015	49	6.13
7	S. D. Charlier, G. L. Stewart, L.M. Greco, C. J. Reeves	Emergent leadership in virtual teams: A multilevel investigation of individual communication and team dispersion antecedents	2016	47	6.71
8	C. T. Siew, T. G. Mazzucchelli, R. Rooney, S. Girdler	A specialist peer mentoring programme for university students on the autism spectrum: A pilot study	2017	46	7.67
9	E. A. Babin	An examination of predictors of nonverbal and verbal communication of pleasure during sex and sexual satisfaction	2013	40	4
10	A. Krishnan, D. Atkin	Individual differences in social networking site users: The interplay between antecedents and consequential effect on level of activity	2014	30	3.33
11	L. T. Fall, S. Kelly, P. MacDonald, C. Primm, W. Holmes	Intercultural Communication Apprehension and Emotional Intelligence in Higher Education: Preparing Business Students for Career Success	2013	29	2.9
12	R. S. Bernstein, M. Bulger, P. Salipante, J. Y. Weisinger	From Diversity to Inclusion to Equity: A Theory of Generative Interactions	2020	27	9
13	X. Shi, T. M. Brinthaupt, M. McCree	The relationship of self-talk frequency to communication apprehension and public speaking anxiety	2015	27	3.38
14	S. B. Brundage, A. B. Hancock	Real enough: Using virtual public speaking environments to evoke feelings and behaviours targeted in stuttering assessment and treatment	2015	25	3.13
15	A. M. Ledbetter, A. N. Finn	Teacher Technology Policies and Online Communication Apprehension as Predictors of Learner Empowerment	2013	25	2.5

Table 7 *(continue)*

No.	Authors	Title	Year	Cites	Cites per Year
16	C. Fortner-Wood, L. Armistead, A. Marchand, F. B. Morris	The Effects of Student Response Systems on Student Learning and Attitudes in Undergraduate Psychology Courses	2013	24	2.4
17	K. M. Hunter, J. N. Westwick, L. L. Haleta	Assessing Success: The Impacts of a Fundamentals of Speech Course on Decreasing Public Speaking Anxiety	2014	23	2.56
18	M. Amengual-Pizarro	Foreign language classroom anxiety among English for Specific Purposes (ESP) students	2018	21	4.2
19	S. M. Croucher	Communication Apprehension, Self-Perceived Communication Competence, and Willingness to Communicate: A French Analysis	2013	21	2.1
20	S. A. Coetzee, A. Schmulian, L. Kotze	Communication apprehension of South African accounting students: The effect of culture and language	2014	20	2.22

The top 20 highly cited articles on CA are about foreign language learners' anxiety (Numbers 5–6, 18) and CA during public speaking (Numbers 13, 14, 17). Nonetheless, investigations have been made beyond the language classroom (Numbers 7–9) and on the influence of cultural background (Numbers 11, 12, 19, 20). The citation analysis suggested that articles on CA online are cited more than those on the traditional core areas of CA in public speaking and foreign language learning classrooms.

The study utilised the VOSviewer software using the complete counting approach to generate visual representations of co-citation and co-authorship networks among multiple authors. As for co-citation analysis, the selection criteria for the unit analysis of cited authors entailed selecting writers with a minimum of 15 citations. Figure 5 shows that six clusters were formed from 70 authors' co-citation analysis, whereas McCroskey was the leading researcher in CA. McCroskey coined the term "CA" and published the first article in 1970. Various co-authors subsequently published it, as indicated by the numerous lines to other clusters.

McCroskey, MacIntyre, Daly, Beatty, Neuliep, and Martin were the authors with the most co-citations as denoted in the red (cluster 1), green (cluster 2), blue (cluster 3), yellow (cluster 4), purple (cluster 5), and turquoise (cluster 6) clusters. McHorwitz and McIntyre also impacted the field of CA (illustrated by the large red nodes). For example, Horwitz et al. (1986) garnered 199 citations (based on Google Scholar), showing the interest in anxiety experienced by foreign language learners. Nonetheless, the connecting lines between McCroskey and McHorwitz are long, which denotes less similarity in content.
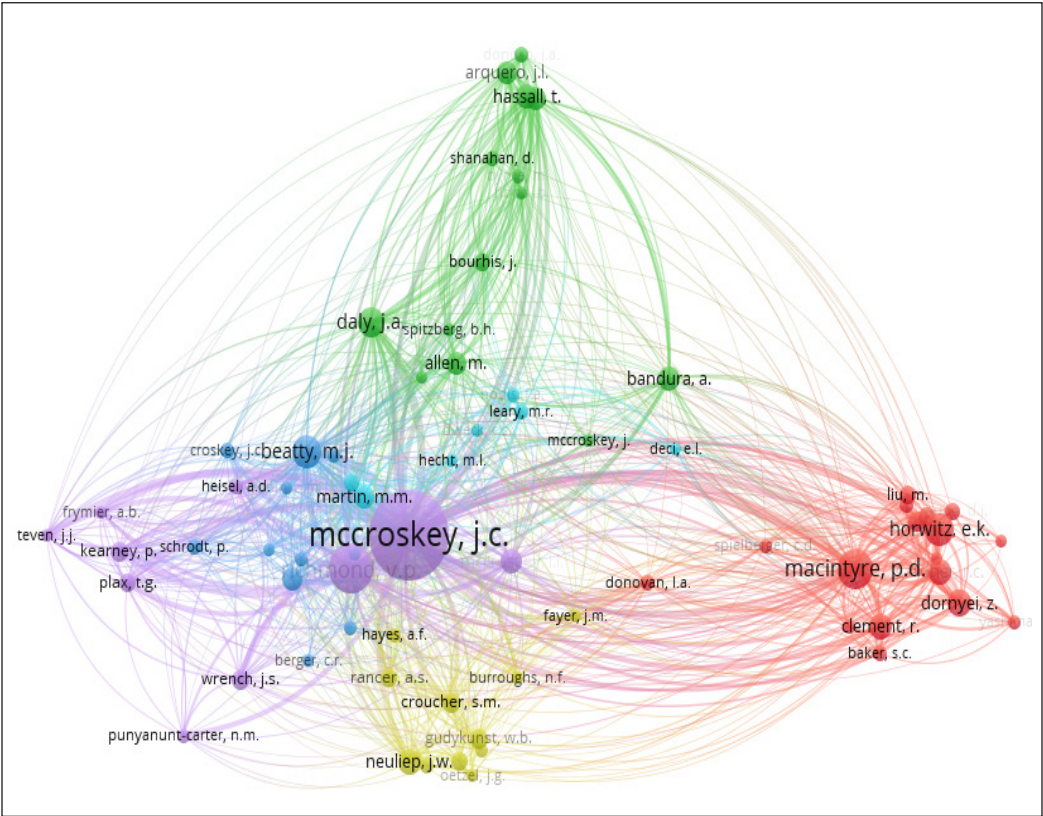
Figure 5. Network visualisation map for co-citation
Note. Unit of analysis = cited authors; counting method = full counting; minimum number of citations of an author = 15

Table 8 shows the number of authors per document among the 204 publications and shows collaboration. A total of 92 authors contributed to 204 publications on CA. One to three authors per publication are common (23.53%, 30.39%, and 26.47%, respectively). This finding is expected, as Ynalvez and Shrum (2011) reported, as it is common for authors to collaborate in communication research. Single-authored publications are valued in CA research and mostly on theoretical and conceptual work. Meanwhile, only one publication had 33 authors, which was an outlier.

Table 8
Number of author(s) per document

Author Count	Total Publications (TP)	Percentage (%)
1	48	23.53
2	62	30.39
3	54	26.47
4	21	10.29
5	10	4.90
6	4	1.96
7	1	0.49
8	1	0.49
9	2	0.98
33	1	0.49
Total	204	100.00%

CONCLUSION

The bibliometric analysis of CA research from 2013 to 2022 shows a period of stability from 2017 to 2020, followed by a considerable increase in publications starting in 2021. This trend suggests rising scholarly attention on CA, possibly linked to shifts in communication patterns, such as the growth of internet communication and the cross-cultural movement of academics and students. From conventional domains such as public speaking and foreign language, CA research is moving into online communication and cultural influences.

A total of 96.57% of the CA publications are in English, but there were contributions from publications in Chinese, Russian, Spanish, Bosnian, and Polish. Based on the number of publications and citations, the United States is widely recognised as one of the major players in research in the field of CA. Collaboration extends from the United States to Malaysia, Turkey, Thailand, and Taiwan. International collaboration enriches the range of views and approaches applied to the study of CA.

Citation analysis shows McCroskey's influence on CA research. He has published with 70 authors. Moreover, collaboration is a prevalent practice in CA research, as witnessed by most publications featuring one to three authors. Although the number of publications has significantly increased, there has been no comparable increase in citations over the last five years. In the field of CA research, publications take time to attain acknowledgement and influence within the academic domain. Monitoring and documenting these citations over an extended period is imperative to analyse their long-term impact appropriately.

The study has a limitation in scope, as it did not analyse the journals where researchers from a particular institution publish to understand the visibility of publications further. In the context of Malaysia, Universiti Teknologi Malaysia produced the most publications, but they are not highly cited. The bibliometric analysis reveals that publications in Computers in Human Behaviour are highly cited, and PLOS One publishes interdisciplinary research on CA. However, Communication Education is a primary source for research articles on Communication Apprehension Theory. Future research on CA research trends should focus on a longer timeframe and examine publication patterns from the conception of an influential theory or publication in the field, as McCroskey (1970) did in the case of CA research. Such bibliometric analyses map out the evolution of knowledge in CA, including predicting future trends.

ACKNOWLEDGEMENT

REFERENCES

Agrawal, S., & Krishna, S. M. (2021). Communication apprehension and psychological well-being of students in online learning. *Behavioral Sciences, 11*(11), Article 145. https://doi.org/10.3390/bs11110145

Ahmi, A., & Mohd, N. M. H. (2019). Examining the trend of the research on extensible business reporting language (XBRL): A bibliometric review. *International Journal of Innovation, Creativity and Change, 5*(2), 1145-1167.

Alrabai, F. (2015). The influence of teachers' anxiety-reducing strategies on learners' foreign language anxiety. *Innovation in Language Learning and Teaching, 9*(2), 163-190. https://doi.org/10.1080/17501229.2014.890203

Amengual-Pizarro, M. (2018). Foreign language classroom anxiety among English for specific purposes (ESP) students. *International Journal of English Studies, 18*(2), 145-159. https://doi.org/10.6018//ijes/2018/2/323311

Babin, E. A. (2013). An examination of predictors of nonverbal and verbal communication of pleasure during sex and sexual satisfaction. *Journal of Social and Personal Relationships, 30*(3), 270-292. https://doi.org/10.1177/0265407512454523

Barker, A. (2010). *Improve your communication skills* (Vol. 39). Kogan Page Publishers.

Beatty, M. J., & Gonzalez, A. M. (2020). Selected physiological dimensions of communication apprehension. In L. S. Aloia, A. Denes, & J. P. Crowley (Eds.), *The Oxford handbook of the physiology of interpersonal communication* (Online ed.). Oxford Academic. https://doi.org/10.1093/oxfordhb/9780190679446.013.6

Beatty, M. J., McCroskey, J. C., & Heisel, A. D. (1998). Communication apprehension as temperamental expression: A communibiological paradigm. *Communications Monographs, 65*(3), 197-219.

Bernstein, R. S., Bulger, M., Salipante, P., & Weisinger, J. Y. (2020). From diversity to inclusion to equity: A theory of generative interactions. *Journal of Business Ethics, 167*, 395-410. https://doi.org/10.1007/s10551-019-04180-1

Bhardwaj, K. (2008). *Professional communication*. IK International Pvt Ltd.

Blume, B. D., Baldwin, T. T., & Ryan, K. C. (2013). Communication apprehension: A barrier to students' leadership, adaptability, and multicultural appreciation. *Academy of Management Learning & Education, 12*(2), 158-172. https://doi.org/10.5465/amle.2011.0127

Brundage, S. B., & Hancock, A. B. (2015). Real enough: Using virtual public speaking environments to evoke feelings and behaviors targeted in stuttering assessment and treatment. *American Journal of Speech-Language Pathology, 24*(2), 139-149. https://doi.org/10.1044/2014_ajslp-14-0087

Campbell, J. (2012). Apprehension and communication. In N. M. Seel (Ed.), *Encyclopedia of the sciences of learning* (pp. 280-282). Springer. https://doi.org/10.1007/978-1-4419-1428-6_53

Carpenter, C. R., Cone, D. C., & Sarli, C. C. (2014). Using publication metrics to highlight academic productivity and research impact. *Academic Emergency Medicine, 21*(10), 1160-1172. https://doi.org/10.1111/acem.12482

Carr, C. T. (2020). CMC is dead, long live CMC!: Situating computer-mediated communication scholarship beyond the digital age. *Journal of Computer-Mediated Communication, 25*(1), 9-22. https://doi.org/10.1093/jcmc/zmz018

Cavanaugh, S. A. (2013). *Intercultural contact, communication apprehension, and social perspective taking* (Master's thesis, East Carolina University). ProQuest Dissertations & Theses Global. https://media.proquest.com/media/hms/

ORIG/2/cKWAH?_s=BFEfcgBfYYc8fBFaN2F Dc7N4mmQ%3D

Charlier, S. D., Stewart, G. L., Greco, L. M., & Reeves, C. J. (2016). Emergent leadership in virtual teams: A multilevel investigation of individual communication and team dispersion antecedents. *The Leadership Quarterly, 27*(5), 745-764. https://doi.org/10.1016/j.leaqua.2016.05.002

Chen, M. (2019). The impact of expatriates' cross-cultural adjustment on work stress and job involvement in the high-tech industry. *Frontiers in Psychology, 10*, Article 2228. https://doi.org/10.3389/fpsyg.2019.02228

Coetzee, S. A., Schmulian, A., & Kotze, L. (2014). Communication apprehension of South African accounting students: The effect of culture and language. *Issues in Accounting Education, 29*(4), 505-525. https://doi.org/10.2308/iace-50850

Corner, J. (2019). Origins and transformations: Histories of communication study. *Media, Culture & Society, 41*(5), 727-737. https://doi.org/10.1177/0163443718820666

Croucher, S. M. (2013). Communication apprehension, self-perceived communication competence, and willingness to communicate: A French analysis. *Journal of International and Intercultural Communication, 6*(4), 298-316. https://doi.org/10.1080/17513057.2013.769615

Daly, J. A. (1978). The assessment of social-communicative anxiety via self-reports: A comparison of measures. *Communication Monographs, 45*(3), 204-218. https://doi.org/10.1080/03637757809375966

de Oliveira, J., da Silva, F. F., Juliani, F., Barbosa, L. C. F. M., & Nunhes, T. V. (2019). Bibliometric method for mapping the state-of-the-art and identifying research gaps and trends in literature: An essential instrument to support the development of scientific projects. In S. Kunosic & E. Zerem (Eds.), *Scientometrics: Recent advances*. IntechOpen. https://doi.org/10.5772/intechopen.85856

England, B. J., Brigati, J. R., & Schussler, E. E. (2017). Student anxiety in introductory biology classrooms: Perceptions about active learning and persistence in the major. *PloS One, 12*(8), Article e0182506. https://doi.org/10.1371/journal.pone.0182506

Erickson, S., & Block, S. (2013). The social and communication impact of stuttering on adolescents and their families. *Journal of Fluency Disorders, 38*(4), 311-324. https://doi.org/10.1016/j.jfludis.2013.09.003

Fall, L. T., Kelly, S., MacDonald, P., Primm, C., & Holmes, W. (2013). Intercultural communication apprehension and emotional intelligence in higher education: Preparing business students for career success. *Business Communication Quarterly, 76*(4), 412-426. https://doi.org/10.1177/1080569913501861

Fan, M., & Cai, W. (2020, 4 August). How does a creative learning environment foster student creativity? An examination on multiple explanatory mechanisms. *Current Psychology, 41*(7), 4667-4676. https://doi.org/10.1007/s12144-020-00974-z

Fiske, J. (2002). *Introduction to communication studies* (2nd ed.). Routledge. https://doi.org/10.4324/9780203134313

Fortner-Wood, C., Armistead, L., Marchand, A., & Morris, F. B. (2013). The effects of student response systems on student learning and attitudes in undergraduate psychology courses. *Teaching of Psychology, 40*(1), 26-30. https://doi.org/10.1177/0098628312465860

Gumpenberger, C., Wieland, M., & Gorraiz, J. (2012). Bibliometric practices and activities at the University of Vienna. *Library Management, 33*(3), 174-183. https://doi.org/10.1108/01435121211217199

Hammick, J. K., & Lee, M. J. (2014). Do shy people feel less communication apprehension online? The effects of virtual reality on the relationship between personality characteristics and communication outcomes. *Computers in Human Behavior, 33*, 302-310. https://doi.org/10.1016/j.chb.2013.01.046

Hashemi, Z., Shokrpour, N., Valinejad, M., & Hadavi, M. (2020). Communication apprehension and level of anxiety in the medical students of Rafsanjan University of Medical Sciences. *Journal of Education and Health Promotion, 9*, p350. https://doi.org/10.4103/jehp.jehp_401_20

Heath, R. L., & Bryant, J. (2000). *Human communication theory and research: Concepts, contexts, and challenges* (2nd ed.). Lawrence Erlbaum Associates Publishers.

Hofmann, S. G., & Hinton, D. E. (2014). Cross-cultural aspects of anxiety disorders. *Current Psychiatry Reports, 16*, Article 450. https://doi.org/10.1007/s11920-014-0450-3

Horowitz, B. (2002). *Communication apprehension: Origins and management*. Singular Thomas Learning.

Horwitz, E. K., Horwitz, M. B., & Cope, J. (1986). Foreign language classroom anxiety. *The Modern Language Journal, 70*(2), 125-132. https://doi.org/10.2307/327317

Hsu, C. (2009). The relationships of trait anxiety, audience nonverbal feedback, and attributions to public speaking state anxiety. *Communication Research Reports, 26*(3), 237-246. https://doi.org/10.1080/08824090903074407

Hunt, J., & Gauthier-Loiselle, M. (2010). How much does immigration boost innovation? *American Economic Journal: Macroeconomics, 2*(2), 31-56. https://doi.org/10.1257/mac.2.2.31

Hunter, K. M., Westwick, J. N., & Haleta, L. L. (2014). Assessing success: The impacts of a fundamentals of speech course on decreasing public speaking anxiety. *Communication Education, 63*(2), 124-135. https://doi.org/10.1080/03634523.2013.875213

Ka-kan-dee, M., & Al-Shaibani, G. K. S. (2018). Tourism students' oral presentation anxiety: A case study. *Pertanika Journal of Social Sciences & Humanities, 26*(T), 231-256.

Krishnan, A., & Atkin, D. (2014). Individual differences in social networking site users: The interplay between antecedents and consequential effect on level of activity. *Computers in Human Behavior, 40*, 111-118. https://doi.org/10.1016/j.chb.2014.07.045

Lam, C. N. C., & Habil, H. (2021). Bibliometric analysis of research on peer feedback in teaching and learning. *Pertanika Journal of Social Sciences & Humanities, 29*(3), 1957-1980. https://doi.org/10.47836/pjssh.29.3.25

Leary, M. R. (1983). Social anxiousness: The construct and its measurement. *Journal of Personality Assessment, 47*(1), 66-75. https://doi.org/10.1207/s15327752jpa4701_8

Ledbetter, A. M., & Finn, A. N. (2013). Teacher technology policies and online communication apprehension as predictors of learner empowerment. *Communication Education, 62*(3), 301-317. https://doi.org/10.1080/03634523.2013.794386

Lim, N. (2016). Cultural differences in emotion: Differences in emotional arousal level between the East and the West. *Integrative Medicine Research, 5*(2), 105-109. https://doi.org/10.1016/j.imr.2016.03.004

Lindh, W. Q., Pooler, M., Tamparo, C., & Dahl, B. M. (2009). *Delmar's comprehensive medical assisting: Administrative and clinical competencies*. Cengage Learning.

MacDonald, K. I., & Dressler, V. (2018). Using citation analysis to identify research fronts: A case study with the Internet of Things. *Science*

& *Technology Libraries, 37*(2), 171-186. https://doi.org/10.1080/0194262x.2017.1415183

Mahoney, L. M., Lawton, B., & Foeman, A. (2017). Measuring the impact of course modality on student knowledge, performance and communication apprehension in public speaking pedagogy. *Media Watch, 8*(1), 7-19. https://doi.org/10.15655/mw/2017/v8i1/41272

Mardesich, A. (2023). *Techniques for reducing public speaking anxiety in adult English learners* [Master's dissertation, University of San Francisco]. Master's Projects and Capstones. https://repository.usfca.edu/capstone/1532

McCroskey, J. C. (1970). Special reports: Measures of communication-bound anxiety. *Speech Monographs, 37*(4), 269-277. https://doi.org/10.1080/03637757009375677

McCroskey, J. C. (1977). Oral communication apprehension: A summary of recent theory and research. *Human Communication Research, 4*(1), 78-96. https://doi.org/10.1111/j.1468-2958.1977.tb00599.x

McCroskey, J. C. (1982). Oral communication apprehension: A reconceptualisation. *Annals of the International Communication Association, 6*(1), 136-170. https://doi.org/10.1080/23808985.1982.11678497

McCroskey, J. C. (1984). The communication apprehension perspective. In J. A. Daly & J. C. McCroskey (Eds.), *Avoiding communication: Shyness, reticence, and communication apprehension* (pp. 13-38). Sage.

McCroskey, J. C. (1997). Willingness to communicate, communication apprehension, and self-perceived communication competence: Conceptualisations and perspectives. In J. A. Daly & J. C. McCroskey (Eds.), *Avoiding communication: Shyness, reticence, and communication apprehension* (pp. 191-216). Sage.

McCroskey, J. C. (2009). Communication apprehension: What have we learned in the last four decades. *Human Communication, 12*(2), 157-171.

McCroskey, J. C., & Andersen, J. F. (1976). The relationship between communication apprehension and academic achievement among college students. *Human Communication Research, 3*(1), 73-81. https://doi.org/10.1111/j.1468-2958.1976.tb00506.x

McCroskey, J. C., & Beatty, M. J. (1984). Communication apprehension and accumulated communication state anxiety experiences: A research note. *Communication Monographs, 51*(1), 79-84. https://doi.org/10.1080/03637758409390185

Naser, N. A. M., & Isa, I. A. M. (2021). Public speaking anxiety in oral presentation class among undergraduates. *International Journal of Academic Research in Business and Social Sciences, 11*(10), 877-889. https://doi.org/10.6007/IJARBSS/v11-i10/11456

Nelson, D. L. (2011). *ORGB*. Cengage Learning.

Neuliep, J. W., & McCroskey, J. C. (1997). The development of a US and generalised ethnocentrism scale. *Communication Research Reports, 14*(4), 385-398. https://doi.org/10.1080/08824099709388682

Öz, H., Demirezen, M., & Pourfeiz, J. (2015). Willingness to communicate of EFL learners in Turkish context. *Learning and Individual Differences, 37*, 269-275. https://doi.org/10.1016/j.lindif.2014.12.009

Punyanunt-Carter, N. M., De La Cruz, J. J., & Wrench, J. S. (2017). Investigating the relationships among college students' satisfaction, addiction, needs, communication apprehension, motives, and uses & gratifications with Snapchat. *Computers in Human Behavior, 75*, 870-875. https://doi.org/10.1016/j.chb.2017.06.034

Radzuan, N. R. M., & Kaur, S. (2016). Engineering students' communication apprehension and competence in technical oral presentations. In A. Normore, L. Long, & M. Javidi (Eds.), *Handbook of research on effective communication, leadership, and conflict resolution* (pp. 371-383). IGI Global. https://doi.org/10.4018/978-1-4666-9970-0.ch020

Richmond, V. P., & McCroskey, J. C. (1998). *Communication apprehension, avoidance, and effectiveness*. Allyn & Bacon.

Richmond, V. P., & McCroskey, J. C. (2000). The impact of supervisor and subordinate immediacy on relational and organisational outcomes. *Communications Monographs, 67*(1), 85-95. https://doi.org/10.1080/03637750009376496

Rimkeeratikul, S. (2023). Communication apprehension and intercultural communication apprehension among MA students at a public university in Bangkok. *LEARN Journal: Language Education and Acquisition Research Network, 16*(1), 429-447.

Sawyer, C. (2018). Communication apprehension. *Oxford Research Encyclopedia of Communication.* https://doi.org/10.1093/acrefore/9780190228613.013.764

Scager, K., Boonstra, J., Peeters, T., Vulperhorst, J., & Wiegant, F. (2016). Collaborative learning in higher education: Evoking positive interdependence. *CBE—Life Sciences Education, 15*(4), Article ar69. https://doi.org/10.1187/cbe.16-07-0219

Sellnow, D. D. (2005). *Confident public speaking*. Thomson/Wadsworth.

Shaw, C. (2013, February 13). Is English still the dominant language of higher education? – live chat. *The Guardian.* https://www.theguardian.com/higher-education-network/2013/feb/13/english-language-international-higher-education?CMP=share_btn_url

Shi, X., Brinthaupt, T. M., & McCree, M. (2015). The relationship of self-talk frequency to communication apprehension and public speaking anxiety. *Personality and Individual Differences, 75*, 125-129. https://doi.org/10.1016/j.paid.2014.11.023

Shimada, S., & Hideshima, E. (2023). The role of facilitators in online discussion in relation to communication apprehension and attitudes toward nonverbal communication. *2023 3rd International Conference on Electrical, Computer, Communications and Mechatronics Engineering (ICECCME;* pp. 1-6). IEEE. https://doi.org/10.1109/ICECCME57830.2023.10252412

Siew, C. T., Mazzucchelli, T. G., Rooney, R., & Girdler, S. (2017). A specialist peer mentoring program for university students on the autism spectrum: A pilot study. *PloS One, 12*(7), Article e0180854. https://doi.org/10.1371/journal.pone.0180854

Spector, P. E., & Jex, S. M. (1998). Development of four self-report measures of job stressors and strain: Interpersonal conflict at work scale, organisational constraints scale, quantitative workload inventory, and physical symptoms inventory. *Journal of Occupational Health Psychology, 3*(4), 356-367. https://doi.org/10.1037/1076-8998.3.4.356

Staddon, J. (2020, June 24). Why do American universities lead the world in scientific research? *James G. Martin Center for Academic Renewal.* https://www.jamesgmartin.center/2020/06/why-do-american-universities-lead-the-world-in-scientific-research/

Stahrfisher, S. K. (2013). *An exploratory study of family characteristics as predictors of communication apprehension* [Master's dissertation, Texas Christian University]. TCU Master Thesis. https://repository.tcu.edu/handle/116099117/4504

Stuen, E. T., Mobarak, A. M., & Maskus, K. E. (2012). Skilled immigration and innovation: Evidence from enrollment fluctuations in US doctoral programmes. *The Economic Journal, 122*(565), 1143-1176. https://doi.org/10.1111/j.1468-0297.2012.02543.x

Tahir, H., Khor, J., Mozaka, G. M., Kayode, B. K., & Khan, T. M. (2017). Prevalence of communication apprehension among college and university students and its association with demographic factors: A systematic review and meta-analysis. *Archives of Pharmacy Practice, 8*(4), 87-104.

Valevskaya, N. (2019, April 11). US education system: Basic principles. *Forum Daily*. https://www.forumdaily.com/en/sistema-obrazovaniya-v-ssha-osnovnye-principy/

Valls-Ratés, Ï., Niebuhr, O., & Prieto, P. (2022). Unguided virtual-reality training can enhance the oral presentation skills of high-school students. *Frontiers in Communication, 7*, Article 910952. https://doi.org/10.3389/fcomm.2022.910952

Vogel, R. (2014). What happened to the public organisation? A bibliometric analysis of public administration and organisation studies. *The American Review of Public Administration, 44*(4), 383-408. https://doi.org/10.1177/0275074012470867

Weiten, W., Lloyd, M., Dunn, D., & Hammer, E. (2009). *Psychology applied to modern life: Adjustment in the 21st century*. Wadsworth Cengage Learning.

West, R., & Turner, L. H. (2008). *Pengantar teori komunikasi, analisis dan aplikasi* [Introduction to Communication Theory, Analysis, and Application]. Salemba Humanika.

Ynalvez, M. A., & Shrum, W. M. (2011). Professional networks, scientific collaboration, and publication productivity in resource-constrained research institutions in a developing country. *Research Policy, 40*(2), 204-216. https://doi.org/10.1016/j.respol.2010.10.004

Zakaria, R., Ahmi, A., Ahmad, A. H., & Othman, Z. (2021). Worldwide melatonin research: A bibliometric analysis of the published literature between 2015 and 2019. *Chronobiology International, 38*(1), 27-37. https://doi.org/10.1080/07420528.2020.1838534

Exploring Postgraduate Students' Experience with Rubric-referenced Assessment: Limitations and Solutions

Liang Jing Teh[1], Su Luan Wong[1]*, Mas Nida Md Khambari[1], Rahmita Wirza O. K. Rahmat[2] and Sai Hong Tang[3]

[1]*Department of Science and Technical Education, Faculty of Educational Studies, Universiti Putra Malaysia, 43400 UPM Serdang, Selangor, Malaysia*
[2]*Department of Multimedia, Faculty of Computer Science and Information Technology, Universiti Putra Malaysia, 43400 UPM Serdang, Selangor, Malaysia*
[3]*Department of Mechanical and Manufacturing Engineering, Faculty of Engineering, Universiti Putra Malaysia, 43400 UPM Serdang, Selangor, Malaysia*

ABSTRACT

Despite the various benefits of rubric-referenced assessment (RRA), multiple studies have revealed its potential pitfalls. Given the scarcity of research on the limitations of RRA and its solutions in the context of Malaysian postgraduates, this study explores the limitations of RRA and proposes potential strategies for improvement from the perspective of postgraduate students in Malaysia. The study adopted a case study qualitative approach and the Activity Theory as the theoretical framework. Five Malaysian postgraduate students provided their responses via two focus group discussions. The participants highlighted that rubrics may stifle creative self-expression, cause inconsistency in scoring, cause confusion among students, and be limited in catering to various learner needs. To address these issues, the participants recommended that the instructor allocate time for students to understand the rubric and engage in discussion about its content. They also proposed flexibility in rubrics to accommodate revisions based on student feedback and implementing scoring calibration sessions or training to maintain scoring consistency. Other suggestions comprised prioritising inclusive assessments, tailoring rubrics for different learner profiles, including specific numerical indicators in rubric descriptions, using a holistic rubric, and providing feedback to students according to the rubric.

Keywords: Analytic rubrics, areas of consideration, focus group discussion, higher education, limitations, postgraduate students, rubric-referenced assessment

INTRODUCTION

Rubric-referenced assessment (RRA) has emerged as a widely adopted framework that offers a structured and transparent approach to evaluating university students' work (Brookhart, 2018; Cockett & Jackson, 2018; Noh et al., 2021). Despite the recognition that RRA has garnered, it is essential to critically investigate its limitations and challenges. Previous studies have shown that postgraduate students may perceive rubrics to be limited in clarifying the assessor's expectations (Kite & Phongsavan, 2017) and evaluating complex thinking skills (Bennett, 2016). Inconsistent interpretation among different users of rubrics could also affect the scoring reliability of assessments (Venning & Buisman-Pijlman, 2013). Bennett (2016) also claimed that RRA might reduce learners' creativity and might not aid the feedback loop between students and instructors.

Several scholars remarked that instructors should provide genuine feedback on learners' work rather than relying on rubrics (Bennett, 2016). Assessors were also advised to be formally trained to improve scoring consistency (Postmes et al., 2023), simplify the grading system to include broader learning outcomes, as well as have iterative feedback with the students (Kite & Phongsavan, 2017; Venning & Buisman-Pijlman, 2013). Bennett (2016) also suggested reducing the stakes value of academic performance and encouraging intellectual risk-taking.

Malaysian universities have initiated alternative assessments such as RRA since the early 2000s (Darus et al., 2003). Since then, RRA has become a prevalent method for evaluating tertiary-level students' performance in Malaysia (Bukhari et al., 2021; Saeed et al., 2019). This is in line with the nation's plan to replace conventional assessments with alternative assessments that could develop 21st-century skills among university students (Ministry of Higher Education Malaysia, 2021). It is vital to understand the postgraduates' perspective on the use of RRA to foster a more effective integration of RRA in higher education.

Nevertheless, a knowledge gap exists within the literature regarding RRA's limitations and its potential solutions, especially from the perspectives of Malaysian postgraduate students. This is because the stated limitations and potential solutions of RRA were not in the context of Malaysian postgraduates. Also, most existing literature on RRA only reported findings among undergraduate students, and only a few studies focus on investigating RRA's limitations and solutions (Brookhart, 2018; Postmes et al., 2023). Hence, this study aims to address this gap by gaining deeper insights into Malaysian postgraduates' perspectives on the limitations of RRA and the potential solutions.

LITERATURE REVIEW

Rubric-referenced Assessment

RRA is an evaluation method that uses a predefined set of criteria or standards to assess and grade students' work. It provides a structured framework for evaluating student performance, offering clear guidelines and expectations for what constitutes high-

quality work. Different practitioners and academicians have had different definitions of rubrics throughout the past, but according to Popham (1997), rubrics have three main elements. The first is specificity, and the rubric should clearly and specifically define the criteria that will be used to evaluate student performance. The second element is inter-rater reliability; the criteria and categories in the rubric must be explicit enough to ensure that different evaluators will similarly apply them. Finally, the third element is flexibility. Rubrics must be flexible enough to accommodate numerous levels of student performance and be available for subjective judgment. Rubrics can be designed as either analytic or holistic rubrics (Brookhart, 2013). An analytic rubric has several assessment criteria in separate rows, which are described in columns according to the rating scale. In a holistic rubric, all criteria are combined into a single overall performance description and arranged along rows of the rating scale (Popham, 1997).

RRA is widely used in HE as a valuable tool for evaluating student performance (Kite & Phongsavan, 2017; Venning & Buisman-Pijlman, 2013). Previous studies have found that the benefits of RRA include clarifying instructor's expectations (Kite & Phongsavan, 2017; Pérez-Guillén et al., 2022; Venning & Buisman-Pijlman, 2013), promoting consistency and transparency in grading (Andrade & Du, 2005; Chowdhury, 2019; Venning & Buisman-Pijlman, 2013), enhancing feedback and assessment literacy (Chowdhury, 2019; Postmes et al., 2023), allowing students to engage in self-reflection and self-assessment (Anandi & Zailaini, 2019; Bukhari et al., 2021; Saeed et al., 2019; Venning & Buisman-Pijlman, 2013), supporting differentiation and individualisation in assessing student work (Chowdhury, 2019; Holmstedt et al., 2018; Kite & Phongsavan, 2017), as well as facilitating students' self-assessment (Anandi & Zailaini, 2019; Fraile et al., 2017; Jonsson, 2014; Oakleaf, 2009; Venning & Buisman-Pijlman, 2013).

Navigating the Potential Drawbacks of Rubric-referenced Assessment

Despite the aforementioned benefits of RRA in higher education, previous work also revealed the potential drawbacks of RRA. Notably, a qualitative study done by Kite and Phongsavan (2017) offers a crucial student-centred insight, suggesting that even though university students were provided with rubrics, they still lack tacit knowledge of the underlying criteria in the rubrics. This discrepancy between the lecturer's expectations and students' understanding of assessment rubrics can result in substantial disparities in grasping the essence of assessment rubrics. Panadero and Romero (2014) did a comparative study that comprised 218 prospective teachers and concluded that the students who utilised rubrics reported more stress and a lower tendency to self-regulate their learning, potentially hindering their autonomy and self-guided academic growth.

These student-centred critiques were supported by the opinions of Bennett (2016)

and Sadler (2014), who questioned the pedagogical implications. They contended the importance of nurturing independent judgment and the discernment of quality work among students rather than merely adhering to pre-set criteria in rubrics. A qualitative study among 12 postgraduate participants and supervisors conducted by Venning and Buisman-Pijlman (2013) argued that different users of rubrics would have different interpretations of rubrics. Bennett (2016) and Sadler (2014) also expressed the same sentiments, indicating that rubrics could be limited in assessing subjective work like essays or artwork, which would conjure inconsistency in scoring. A similar concern was raised by Sitorus (2020), who reasoned that too general rubrics may result in inconsistent learners' results. On the other hand, too detailed rubrics may not accommodate educators' subjectivity and may overlook abstract areas such as originality and creativity shown by the learners.

The purpose of HE should be to develop students of higher-order thinking skills (Bennett, 2016). Providing students with transparent assessment processes and criteria could lead them to focus on shallow strategies in complying with the criteria (Bearman & Ajjawi, 2021; Venning & Buisman-Pijlman, 2013). With regards to the drawbacks of using rubrics, Matshedisho (2020) suggested that lecturers should discuss the rubrics with students because it not only closes the gap between the lecturer's expectations and students' interpretation of rubrics but students' views can also be taken in to improve the implementation of the rubric. Mok and Toh (2015) also stressed the importance of ensuring a shared understanding of the rubrics among students and assessors. This can be achieved through peer and self-assessment practices, where students evaluate themselves using the same rubrics, engage in discussions and negotiate meaning with each other and their assessors. This shared understanding ensures that both students and assessors have a common yardstick of measurement (Mok & Toh, 2015).

Furthermore, Shadle et al. (2012) also recognise the importance of considering learners' different backgrounds and the specific skills and knowledge required in different disciplines. By tailoring rubrics to the specific needs of different learner groups, educators can ensure that the assessment is aligned with the learners' backgrounds and provides a more accurate reflection of their abilities (Shadle et al., 2012). By analysing 313 research skill rubrics used in both formative and summative assessments among postgraduates, Postmes et al. (2023) concluded that training programs for developing specific rubric criteria and providing feedback based on these criteria are crucial. The authors also stated that flexibility in applying rubrics should be provided to instructors so that personalised feedback can be given to the students. Venning and Buisman-Pijlman (2013) also suggested that formal training among instructors could improve scoring consistency.

Sadler (2014) also recommended having a group of competent judges classify a body of student work and elaborate exactly why such a classification was reached.

When an agreement is warranted, this would concretise the description of criteria as the standards can be referred to as a concrete object. In other words, a sound-designed rubric is inadequate, and it must be followed by appropriate application to reap the benefits of assessment rubrics (Panadero & Jonsson, 2020). Additionally, iterative feedback loops between instructors and students allow rubrics to be improved through feedback and enable students to understand the rubric's criteria and their performance (Kite & Phongsavan, 2017; Venning & Buisman-Pijlman, 2013).

The lack of relevant studies in the context of Malaysian postgraduates, together with the diverse viewpoints of RRA among university students, indicates a gap in understanding the limitations of RRA and the potential resolutions perceived by postgraduate students in Malaysia. This warrants a deeper inquiry into the potential risks of using RRA and the ways of mitigating them, especially within the context of Malaysian postgraduate students. Thus, this study aims to explore postgraduate students' perspectives on the limitations of RRA and its areas of consideration for improvement. As such, the following presents the research objectives that emerged from the existing literature and theoretical framework:

1. To explore postgraduate students' perspectives on the limitations of RRA.
2. To explore postgraduate students' perspectives on the areas of consideration in improving RRA.

THEORETICAL FRAMEWORK

Activity Theory

The Activity Theory (AT) by Vygotsky (1978) was adopted as the theoretical foundation for this study to gain a deeper understanding of the postgraduate students' experience with RRA. AT is a socio-cultural framework which emphasises the dynamic association between subjects, mediating tools, and the object, which leads to an outcome (Vygotsky, 1978). The subject in an activity system is the individual or group whose perspective is adopted (Engeström, 1993). The term "object" refers to the subject matter or problem space in which the activity is directed, and it serves as the basis that is shaped or transformed into outcomes through tools (Engeström, 1993). Tools play a mediating role in the activity's object and contribute to the transformation of the object into an outcome. This transformation can be either anticipated or unforeseen, as the mediating tools can either facilitate or impede the progress of the activity (Engeström, 1993; Vygotsky, 1978).

Figure 1 illustrates the theoretical framework of this study. In the context of this study, the activity system was used to implement RRA among the postgraduate students. This activity system was analysed using the AT as a framework. The subject, object, and mediating tools were the postgraduate students, academic assessments, and rubrics accordingly. The postgraduate students (subject) interact with the academic assessments (object) under the guidance of the rubrics (mediating tools). In this process, the students could have

various experiences with RRA (outcome), such as their experiences in completing the assessments and the perceived clarity of the instructor's expectations. According to AT (Vygotsky, 1978), the integration of RRA might enhance or restrain the students' experience in completing their academic assessments. For instance, the clearly defined description of rubrics could enhance the student's understanding of the instructor's expectations and improve their performance. On the contrary, their performance may be restrained if the rubrics are ambiguous and rigid.

Given the relatively lower number of previous studies on the potential risks of RRA (Bearman & Ajjawi, 2021; Bennett, 2016; Kite & Phongsavan, 2017; Matshedisho, 2020; Panadero & Romero, 2014; Sadler, 2014; Sitorus, 2020; Venning & Buisman-Pijlman, 2013) as compared to the number of previous studies which reported the benefits of RRA (Andrade & Du, 2005; Chowdhury, 2019; Fraile et al., 2017; Holmstedt et al., 2018; Jonsson, 2014; Kite & Phongsavan, 2017; Oakleaf, 2009; Pérez-Guillén et al., 2022; Saeed et al., 2019; Venning & Buisman-Pijlman, 2013), this study focuses on the potential drawbacks of RRA and the ways of overcoming them.

METHODOLOGY

Participants and Procedures

The study was conducted in a Malaysian public university. The participants of this study were selected through purposive criterion sampling as it allowed the researchers to select participants who had experience relevant to the research objectives (Patton, 2014). The inclusion criteria of the participants of this study were (1) postgraduate students of the institution and (2) postgraduate students who have completed the course that incorporated RRA. On the other hand, the exclusion criteria were (1) any students who were not pursuing a postgraduate programme of study and (2) postgraduate students who did not undergo the course which utilised RRA. The postgraduate course that applied
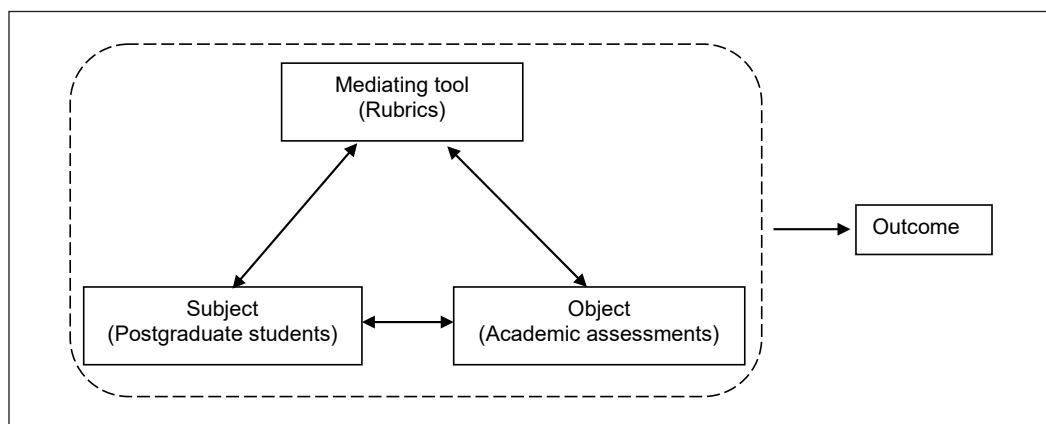
Figure 1. Theoretical framework based on the Activity Theory

for RRA was Educational Technology. One instructor solely implemented it throughout the semester.

Table 1 illustrates the demographics of the participants who have experienced the course, which integrated RRA, and voluntarily participated in this study. All of them were enrolled in the Master of Education in Instructional Technology and Innovation program. They consist of one female and four male postgraduate students from the institution. All the respondents were from an educational field except one that is from the army training field and another from an audio engineering background. Their names have been modified to keep respondents' personal information confidential.

This study employed two focus group discussions (FGDs) to obtain deep insights into students' views of rubrics. Compared to a one-on-one interview, it creates a safer space for respondents to share their opinions and feelings (Krueger, 2014). A FGD protocol was developed by the first author and was evaluated by the other authors to ensure the credibility of the FGD questions. Semi-structured questions were

used to facilitate the FGD to acquire accurate information about the research objectives while maintaining the flexibility to explore emerging ideas (Brinkmann, 2014). Semi-structured questions combine the strengths of both structured (standardisation) and unstructured questions (flexibility), which allow researchers to elicit rich qualitative data (Brinkmann, 2014). Below are the semi-structured questions included in the FGD protocol:

1. In your opinion, what are the limitations of rubrics? Why?
2. Do you think rubrics can sometimes be too rigid or too general? Can you provide examples?
3. Do you think rubrics can introduce or reinforce biases in grading? If so, how?
4. How do you think your understanding of the rubric criteria affects your learning?
5. How well do you think rubrics accommodate diverse learning styles and needs?
6. Do you have anything else you would like to share regarding the limitations of rubrics?

Table 1
Demographics of respondents

Respondent	Gender	Age	Career background
FGD1			
Student #1	Male	36	Teacher
Student #2	Male	42	University Media Producer
FGD2			
Student #3	Male	41	Army Officer
Student #4	Male	40	Teacher
Student #5	Female	34	Teacher

7. In your opinion, what are the ways to overcome these limitations?

8. How can rubrics be designed to be more flexible or adaptable to different contexts?

9. How can we ensure that educators use rubrics effectively?

10. How can we ensure that the students fully understand the rubrics?

11. How can rubrics be adapted to better suit diverse student populations and learning environments?

12. Do you have anything else you would like to share regarding how to overcome the limitations of rubrics?

Additionally, open-ended questions were also prompted spontaneously throughout the FGD so that viewpoints from the respondents are not limited to the researcher's presumption (Creswell & Creswell, 2018). Each FGD took about 35 minutes. At the start of the FGD, the author obtained consent for audio recording from all participants, and a printed copy of the analytical rubric used for the last assignment of the course was given to them to refresh their memory on the rubric used.

Data Analysis

This study employed thematic analysis to analyse data as Terry et al. (2017) stated that this method provides researchers with "accessible and systematic procedures for generating codes and themes from qualitative data" (p. 2). As the respondents conversed in English and Malay language throughout the FGD, the conversation was first transcribed in both languages. The Malay transcript was then translated into English and back-translated to Malay. It was then reviewed by comparing it to the original Malay transcript to ensure language translation accuracy. Three experienced language experts did all the translations and reviews.

Based on the guidelines provided by Creswell and Creswell (2018) as well as Terry et al. (2017), the researchers conducted a thematic analysis of the transcript by first familiarising themselves with the data. The researchers obtained an overall impression of the discussion by reading and rereading the transcripts while keeping the research objectives in mind. Meaning units were then formed by dividing the transcript into smaller parts. Subsequently, the meaning units were condensed into shorter sentences while retaining the core meaning. This was followed by coding, whereby each condensed meaning unit was assigned a code. After coding, all related or repeated codes were grouped into categories about the research questions. The categories and codes were interpreted inductively.

Francis et al. (2010) suggested four principles for reaching data saturation: (1) stating the initial analysis sample, which is the minimum sample size for the first round of data analysis; (2) specifying the stopping criterion, which refers to the sample size to be subsequently included until ideas or themes stopped emerging; (3) the data analysis should be conducted by at least two independent researchers; and (4) to report the data saturation methods and findings.

The initial analysis sample of this study was set to at least two participants for the first FGD, as Bukhari et al. (2021) qualitative study regarding RRA also involved two participants. Nonetheless, the researchers included three more participants for the second FGD as the stopping criterion. No new themes emerged from the second FGD. Therefore, the researchers stopped collecting and analysing data after the second FGD. Although data analysis was only conducted by the first author, the process of the thematic analysis (from meaning units to categories) was tabulated by the first author and validated by the remaining authors. The researcher also conducted member-checking, whereby the participants validated the interpretations by the researcher to ensure there were no discrepancies between the intended meaning and the interpretations.

The inter-rater reliability (R) of this study was assessed according to the formula suggested by Marques and McCall (2005):

R = (total number of agreements) / (total number of observations) × 100

To identify findings with similar depth, both authors (inter-raters) set the number of listed categories to 13 and allocated seven days to analyse the data (Marques & McCall, 2005). Among the 13 categories derived by both authors, 10 similar categories emerged. Based on Hamilton et al. (2000), the confusion matrix of this study is presented in Table 2.

Thus, the R of this study is 76.92%. The R was calculated as follows:

R = 10 / 13 × 100 = 76.93%

According to Marques and McCall (2005), the accuracy rate (AC) of this study is 72.72%, which was calculated as follows:

AC = (10 + 6) / (10 + 3 + 3 + 6) × 100 = 72.72%

As the R (76.93%) is higher than the AC (72.72%) of this study, the inter-rater reliability of this study is considered established. The authors then organised the common categories into four themes, with two themes for each research objective.

FINDINGS AND DISCUSSION

Student's Perspective on the Limitations of Rubrics

One of the objectives of this study is to explore postgraduate student's angle on the limitations of RRA. Overall, the respondents pointed out four constraints of the rubric from their experience, which

Table 2
Confusion matrix of this study

		Inter-rater 2	
		Agree	Disagree
Inter-rater 1	Agree	10	3
	Disagree	3	6

are (1) limitation in self-expression, (2) inconsistency in scoring, (3) confusion due to the nuances in descriptions, and (4) lack of flexibility in adapting to learners' needs.

Impact of Standardisation on Autonomy Among Students and Educators

During the FGD, the respondents stated that using rubrics in assessing students' performance can limit students from expressing themselves freely and creatively.

> *"With the rubrics, I couldn't express my own opinion. I am like limited by the rubrics, if I do something different from the rubrics, I would be worried that my marks will be affected. So, I just follow"* (Student #3)

This finding highlights the tension between structured assessment and the need for creative autonomy. While rubrics are intended to standardise evaluation, they can inadvertently limit students' ability to explore and express original ideas. This is especially so for students pressured to excel in the assessments. They felt *"worried that"* their *"marks would be affected"* if they did not comply with the pre-set criteria despite not fully resonating with them. Although this differs from the findings by Bukhari et al. (2021) and Saeed et al. (2019), it is in line with the critique by Bennett (2016) and Bearman and Ajjawi (2021). Sadler (2014) stated that tertiary students should cultivate autonomous thinking rather than just complying. The phrase "*I just follow*" that occurred during the FGD suggests that learners may be prone to diminished self-

leadership and autonomy when they comply with the pre-determined criteria (Venning & Buisman-Pijlman, 2013).

Apart from the above, one respondent drew from his teaching experience and spoke about the rigidity of rubrics, especially when they are executed on a larger scale.

> *"When it is implemented on a bigger scale, we [educators] are forced to follow it although we do not agree with it. For example, in my English writing class, is the language or the story more important? I used to prioritise my students' stories. This is what I thought was right but the main criteria to score based on the rubrics is the language."* (Student #1)

The respondent further clarified his view by relating to the rubric during the FGD.

> *"Like for this [rubric for] infographics, is the design more important? Or is it the content? Different lecturers may have different views. So, it is like beyond our [educators'] capabilities to change it. There is a possibility that rubrics would clash with what the instructor feels most suitable for the students."* (Student #1)

This rigidity suggests that the pre-set criteria in a centralised rubric could cause a dilemma among the instructors. They are forced to comply with the rubric, and it is beyond their authority to choose to focus on the learning needs of students. In other words, students may focus on meeting

predefined criteria when the assessment tools provide structure, which could stifle students' creativity (Bearman & Ajjawi, 2021; Sadler, 2014). However, students may struggle to understand their instructor's expectations and experience anxiety if the success criteria of an assessment are not provided (Pérez-Guillén et al., 2022). This is congruent with the research done by Sitorus (2020), which revealed the challenges in striking the right balance between a rubric that is too general (leading to inconsistent learner results) and one that is overly detailed (neglecting educators' subjectivity and learners' originality and creativity).

Viewing this finding through the lens of AT, the engagement between the postgraduate students (subject) and the academic assessments (object) was affected by the rubrics (mediating tools). While the rubrics aimed to clarify the success criteria of the assignments, they inadvertently constrained students' ability to express original ideas and conflicted with instructors' professional judgment. This could lead to frustration among the students' overall experience with RRA (outcome). This resonates with Vygotsky's (1978) AT that while the tools may be helpful, they can also impose limitations on the subject. This indicates a contradiction within the activity system that needs to be addressed to support students' creativity and learning.

Challenges in Fair and Consistent Assessment

Even with the use of rubrics, inconsistency in final marks persists among learners; a few of the respondents shared this during the FGD.

"For me, the rubric also has a weakness in terms of scoring. For example, subjects like research methods have many classes, but the learning content and assessments are the same. The lecturer teaching class A and another lecturer teaching class B score their students differently although they are using the same rubric. And from there, we can see the scoring is different." (Student #2)

"Maybe the lecturers' interpretation of the rubric is different." (Student #3)

The inconsistency in scoring points to the potential for subjective interpretation of rubrics among different lecturers, which can undermine the fairness and reliability of assessments. This result is in contrast with the inferences made by Andrade and Du (2005), but it is in parallel with the study conducted by Venning and Buisman-Pijlman (2013), Bennett (2016), and Sadler (2014), which concluded that different interpretations of rubrics could result in inconsistent scoring of assessments.

However, it is pertinent to keep in mind that similarity does not imply consistency, as separate groups of students may have different levels of performance. During the FGD, remarks such as "*The lecturer teaching class A and another lecturer teaching class B score their students differently although they are using the same rubric*" imply that the participants may not be aware of

the difference between consistency and similarity. Also, it is important not to misunderstand the intent of rubrics. The aim of rubrics is not to make the score the same but to make scoring more transparent and consistent (Kite & Phongsavan, 2017; Venning & Buisman-Pijlman, 2013).

Moreover, one respondent raised concerns about the challenges she faced in understanding the subtle difference between the descriptions across the rating scale, and another respondent chipped in actively.

> *"It is hard to justify the difference between the marks because the mark is between 1 and 20, right, so I cannot justify the difference between 16 and 20. It is a very small difference, but the result will be different. Sometimes I think, I can get 16–20, but somehow, in Prof.'s view, I did not hit the category. So sometimes I don't see the difference."* (Student #5)

> *"Sometimes, it is more difficult to answer the questions of rubrics than the actual assignment question. Like Student #5 said, the rubric is too general."* (Student #3)

This suggests that even at a postgraduate level, students would still be confused by the specifiers in the rubrics. This observation is in contradiction with the findings by Pérez-Guillén et al. (2022) and Venning and Buisman-Pijlman (2013). However, it aligns with the study done by Kite and Phongsavan (2017), Matshedisho (2020), and Sitorus (2020), which showed that a gap between students' knowledge of rubrics and lecturers' expectations could persist despite the inclusion of descriptions of criteria. This could elicit additional psychological distress in completing their assessment (Panadero & Romero, 2014).

Another respondent agreed with the above comments but said the confusion would subside with time and experience using rubrics.

> *"… but this is only during the earlier stage of using rubrics. After using it for some time, I think this problem does not exist."* (Student #4)

This signifies that as students become more experienced in using rubrics, this problem could fade away. This comment is consistent with the findings of the study conducted by Pérez-Guillén et al. (2022). The findings highlight the obstacles to RRA implementation in terms of ensuring fairness across various evaluators and increased cognitive load among students due to complex rubrics' descriptions (Matshedisho, 2020; Sitorus, 2020). This suggests that the rubric descriptors must be carefully designed and articulated so that the disparities between the users' interpretation and the intended meaning of the rubrics' criteria can be minimised. This also underscores the pertinence of continuous effort from both instructors and students throughout the implementation of RRA. The interpretation of rubrics needs to be standardised among instructors to ensure assessments' validity and reliability. In contrast, students need to be given

guidance and time to understand the intended clarity of the rubrics.

From an AT perspective, the subjects in this case are twofold: the instructors and the postgraduate students. The potential inconsistency in students' academic scores and the students' confusion regarding the subtle differences in the rubrics' descriptions signify a subject-tool contradiction. Although the rubrics were intended to enhance consistency in scoring, the instructors' subjective interpretation could result in inconsistent grading. Similarly, while rubrics were designed to clarify success criteria, the nuances in the description may cause discrepancies in the understanding of rubrics among students. In other words, the rubrics (mediating tool) did not function uniformly in the activity system. Consequently, these could lead to an unpleasant learning experience (outcome). However, as students become more familiar with the rubrics over time, the rubrics could become a more effective mediating tool. This could help reduce the aforementioned contradictions.

Student's Perspective on the Areas of Consideration

When prompted on how to overcome the aforementioned limitations, all the participants talked at length about their suggestions for improving RRA. The suggested solutions include implementing RRA with collaboration and feedback among instructors and students and customising rubric design for inclusive assessments.

Collaborative and Feedback-driven Rubric Implementation

A few respondents recommended that the educators should be trained in applying the rubrics and that the voices of students should be heard during RRA implementation.

"For me, this is for the lecturers, especially for a subject that has multiple lecturers, they should examine their understanding of the rubrics, see if it is the same or not." (Student #2)

"Maybe we can give the lecturers a centralised training… For me it is balancing the weightage for the categories. One way is you can discuss with the students." (Student #1)

This indicates that lecturers should have a scoring calibration session or centralised training among themselves if the same rubric is to be utilised by multiple lecturers. This can increase the consistency in scoring between different lecturers. This comment resonates with the suggestion provided by Postmes et al. (2023), Venning and Buisman-Pijlman (2013), and Sadler (2014), stating that the judges should exchange their evaluations to concretise the rubric's criteria based on concrete students' work. As the assessment rubric is subjective, its design and implementation should be flexible enough to adapt to the feedback received or via reflection post-assessment.

The respondents also shared enthusiastically about the importance of giving time to students to digest the

information in the rubric and having a discussion together with the lecturer.

"If I can suggest, it would be even better if we [students] were allowed to go back and read through everything, and next week, we would discuss the rubrics and questions. This gives us time to digest. This is because even if you give me one hour, I cannot fully understand [the rubric and the question], and when the lecturer asks us on the spot, "Do you understand?" we will just be like, "Ya, ya" (agreeing]." (Student #3)

"Or explain why you are giving me this. So, as in, like you want the students to know that, okay, this is infographics, design is important, so therefore this one is 70 per cent, for example, just giving a number. As in, like, you're clearing doubts in our mind, okay, so the design is only 20 per cent; why is it like that? I guess it can help, but it will be tedious, so is it worth it? Probably?" (Student #1)

The results show that tertiary students prefer to be given time to digest the rubric and discuss it with the instructor. This is so that students' understanding of the rubric can be contextualised, and lecturers can make amendments to the rubric based on the students' comments if necessary. This finding is in line with the study done by Kite and Phongsavan (2017), Matshedisho (2020), and Mok and Toh (2015), which concluded that educators should communicate with the learners about the rubrics to narrow the gap in expectations between the two parties.

Furthermore, a few respondents also suggested that students can better understand the rubric when educators provide feedback according to it.

"The lecturer can give us feedback based on the rubrics so that we can improve and revise it based on the rubrics. Because we might not be sure whether we answer the question correctly even though we follow the rubrics." (Student #5)

"Ya, when we get our result, we could see, for example, based on the rubrics, this part I get 15 marks out of 20 marks, that part I get five marks out of 20 marks. That is how we can understand the rubrics." (Student #3)

Feedback explicitly linked to rubric criteria allows students to identify the areas for improvement and improve their use of assessment rubrics in the future (Kite & Phongsavan, 2017; Venning & Buisman-Pijlman, 2013). Essentially, merely designing and giving students rubrics is inadequate, meaningful conversations, reflection and adjustment need to take place to ensure quality implementation of RRA (Kite & Phongsavan, 2017; Panadero & Jonsson, 2020; Sadler, 2014; Venning & Buisman-Pijlman, 2013).

Based on the theoretical framework, these findings highlight the potential solutions for resolving the aforementioned contradictions in the activity system. Training instructors to apply rubrics more consistently, allowing time for students to process the rubrics, and having two-way

communication between instructor and students about the rubrics could foster a shared understanding among the instructors as well as the students (subjects). This allows the rubrics (mediating tools) to function more uniformly in the activity system and enables students to engage with the assessments (object) more effectively. This could potentially enhance students' overall experience with RRA (outcome).

Customising Rubric Design for Inclusive Assessment

The students suggested that assignments should allow for diverse perspectives, which would require rubrics to be more inclusive.

> *"There was one semester that the question asked us for an opinion from the perspective of a teacher, then the rubrics were not suitable for Student #3."* (Student #5)

> *"I need to request back from Prof., can I answer from an army's perspective because I really do not know how to answer from a teachers' perspective…"* (Student #3)

> *"If Prof. were strict to the rubrics, he would have a disadvantage."* (Student #5).

> *"For example, in one of the assignments by Prof., she opened the question for views from different fields, so I can give my answer from an engineer's point of view, and he can give an answer from an army's point of view."* (Student #2)

The results indicate that by incorporating diverse perspectives, rubrics can become more inclusive, catering to a wider range of student experiences and backgrounds. Sadler (2014) mentioned a similar idea, stating that valid students' responses start from quality assessment tasks. In terms of rubrics' content, a respondent mentioned that learners at different stages should be provided with different rubrics.

> *"For me, I think the description of the rubric should cater to different levels of learners. For example, for younger learners like primary school students, tale writing essays, for example, it will include content like grammar and others. But for adults, it is more towards idea, more towards opinion, right."* (Student #2)

These comments show that varying levels of learners should have individualised rubrics. This also suggests that learners with particular distinctive backgrounds may be more vulnerable to the challenges of RRA. This comment is congruent with the findings by Shadle et al. (2012), which emphasise the customisation of rubrics to accommodate different learners' backgrounds for a more accurate representation of their achievement levels. As they were discussing the rubric's design, another student pointed out that she would add specific numbers in the description of the rubrics, and another student gave his comment, too.

> *"One more thing is, if I were to develop a rubric, I would add in numbers, as*

in how many main points. Like for example, if the student wants to get full marks, "write five main points" or something like that. more specific. Like the second-best category, maybe it's 4 points. Then the student can be like, okay, I want the highest mark, so I will research 5 points and elaborate on them." (Student #5)

"I think rubrics have to go for quality and quantity. For example, if the student gives five main points, good the target is there, but if the five main points are not related to the question or topic, then ah, marks will be deducted." (Student #3)

The respondents who previously voiced concerns about the abstract subtleties in the rating scale description suggested that a holistic rubric might be more straightforward.

"Instead of putting like 1–5 marks, 16–20 marks, the lecturer can just put the description for one full mark category." (Student #3)

"Holistic." (Student #5)

"You do not need the lower marks description because this is like, oh, if I am a lazy student, I only go for the lower marks criteria. But are there students who want low marks for their results? Of course, we all want to have high marks right." (Student #3)

The respondents proposed the idea of including specific numbers in the description of the rubric or simplifying the rubric by having a description for only one highest rating. According to Brookhart (2013), criteria can be described quantitatively, but numbers must be considered a guide, not a hard rule. It also comes down to the type of task because some assessments of creative work may not be suitable for specifying numbers. Brookhart (2013) also stated that it is crucial to have a description of the lowest to the highest rating so that it is accessible for students from a spectrum of performance, helpful for identifying areas for improvement and giving detailed feedback.

From the perspective of AT, the use of inclusive rubrics, holistic rubrics, and the inclusion of specific numbers in rubrics could align the rubrics (mediating tools) more closely with the needs of the students (subject), allowing them to engage with the assessments (object) with clearer expectations. These amendments enable rubrics to be a more effective mediating tool, which could improve students' experience with RRA (outcome). The summary of the themes and categories derived from the data is illustrated in Table 3.

CONCLUSION

This study aimed to explore the rubric's limitations and areas of consideration from the postgraduate students' angle. As illustrated by the AT (Vygotsky, 1978), different students (subjects) interact differently with assessment rubrics (mediating tools) and academic assessments (object), which led to different experiences with RRA, including the negative experiences discussed in this

Table 3
Themes and categories derived from the data

Research objectives	Themes	Categories
1. To explore postgraduate students' perspectives on the limitations of RRA.	Impact of standardisation on autonomy among students and educators	• Restriction of students' self-expression • Lack of flexibility in adapting to diverse needs
	Challenges in fair and consistent assessment	• Inconsistency in scoring across lecturers • Confusion among students due to abstract nuances in descriptions
2. To explore postgraduate students' perspectives on the areas of consideration in improving RRA.	Collaborative and feedback-driven rubric implementation	• Enhancing communication and iterative adjustment • Providing feedback aligned with rubric criteria
	Customising rubric design for inclusive assessment	• Incorporating diverse perspectives in assignments • Differentiating rubrics for different learning levels • Integrating quantitative and qualitative criteria • Considering holistic rubric approaches

study. From the diverse experiences, the participants suggested potential remedies to overcome the shortcomings of RRA in education.

In general, the respondents shared that assessment rubrics have the risks of limiting students' creative self-expression, invoking confusion among the students, and contradicting learners' needs. While students perceived that rubrics might create inconsistency in scoring when utilised by numerous lecturers, learners need to be able to discern between similarity and consistency. Further, students must understand that the intent of implementing RRA is not to achieve identical learning outcomes but rather to ensure consistent and transparent grading.

With regards to the suggested ways of improvements, the central idea was the intention to receive feedback from the users

of the rubric and the flexibility of rubrics to be revised when necessary. The other recommendations consist of ensuring the inclusivity of assessment, having different rubrics for different learners, including both quantitative and qualitative content in the description of criteria, having rubrics with only one rating category, and providing feedback to students based on the rubric. The inputs given by the respondents were in parallel with the three features of rubrics mentioned in the literature review , which are specificity, inter-rater reliability, and flexibility. Hence, this study signifies that rubrics have a few weaknesses despite the many benefits proclaimed in various previous studies. Rubrics also have several potential remedies that should be tested for validation. In short, an effective incorporation of RRA is tedious but necessary so that learners can have a quality education.

Implications of the Study

The Program Learning Outcome (PLO) of the master's program in this study encompasses developing professionals who are knowledgeable and highly skilled in educating and leading autonomously and developing educational technology through sustainable teaching innovation. The Course Learning Outcome (CLO) includes demonstrating leadership qualities, conducting research, and using digital tools to resolve problems in the field of educational technology. In relation to the mentioned PLO and CLO, this study highlights the need for rubrics to evaluate theoretical knowledge and practical skills, such as students' ability to lead projects, the rigour of their research, and proficiency in using digital tools to solve real-world problems. This necessitates the development of dynamic and adaptable rubrics with criteria that capture the mentioned competencies' nuances.

Through understanding the students' experience, the findings suggested that communication and flexibility are essential in the implementation of rubric-referenced assessments. Specifically, for novice users of rubrics, lecturers should give students time to digest the rubric and discuss it for clarification (Kite & Phongsavan, 2017; Matshedisho, 2020). Moreover, the findings from this research also suggest the necessity for fostering collaboration among faculty members (Postmes et al., 2023). If the rubric is intended for use across different lecturers, conducting rubric review sessions and providing professional development on its implementation become imperative among the teaching staff. A scoring calibration session whereby a group of lecturers score a set of student work and discuss their rationale can help identify the discrepancies in interpretation and establish a common understanding of the rubric (Sadler, 2014; Venning & Buisman-Pijlman, 2013). After consolidating feedback via different forms of communication, the rubric should be flexible enough to be revised to ensure the clarity and consistency of the rubric's criteria.

Based on the discoveries of this study, educators are prompted to focus on emphasising the diversity of assessment before delving into rubric design (Sadler, 2014). This would allow all students to articulate their ideas creatively (Bennett, 2016). Given the evident complexity of designing and implementing RRA, this study underscores the need for policy formulation. Institutional leaders and decision-makers in institutions play a significant role in encouraging educators to integrate rubrics into their instruction. For instance, for lecturers who would implement assessment rubrics, more capacity in the working schedule should be given. A budget can be allocated to employing teaching assistants to assist in delegating the lecturers' workload, and comprehensive training ought to be introduced to raise awareness and proficiency among the lecturers concerning the effective utilisation of assessment rubrics.

Viewing the research findings through the lens of AT also provides several theoretical implications. As postulated by the AT, while rubrics (mediating tools) were

intended to guide and support learning, they could impose external constraints on student learning outcomes (outcome), such as limiting students' creative expression in completing their assessments (object; Vygotsky, 1978). This raises a dilemma about the balance between providing structure and fostering individual agency within a learning environment (Sitorus, 2020). AT focuses on the pertinence of social interaction and collaboration in knowledge construction. The limitations of rubrics could be addressed by collaborative rubric development and ongoing communication among both instructors and learners, building a shared understanding within the learning community (Kite & Phongsavan, 2017; Panadero & Jonsson, 2020; Sadler, 2014; Venning & Buisman-Pijlman, 2013).

Further, AT assumes that knowledge is constantly evolving and mediated through interactions, which highlights the risks of a rigid rubric (Engeström, 1993). This indicates that assessment tools should be adaptable and fluid, allowing for ongoing feedback and adjustments based on specific learning and learner needs (Sadler, 2014). In short, viewing the limitations and areas for consideration of rubrics through the lens of AT offers valuable insights into the complex interplay between subject, tools, object, and outcome. These implications can guide practitioners in developing more effective assessment practices.

Limitations of the Study

This study has postulated several key findings on RRA, but a few limitations

exist. Firstly, the respondents of this study comprised a small group of postgraduate students and the research outcomes were based on their self-reported data. Thus, the results of this study cannot be generalised to populations of students with different demographics from the respondents in this study. In qualitative research, researchers are the main instrument in collecting data, and the authors acknowledged that the findings in this study are prone to the researchers' bias and idiosyncrasies. It is recommended that quantitative research on relevant topics be done with a larger sample size to validate the findings of this study. Furthermore, this study explored the limitations and areas of consideration for analytic rubrics only; similar research can be conducted on other types of rubrics, such as holistic rubrics, in the future.

Recommendations for Future Studies

The findings and insights from this study further call for future research endeavours, enriching the understanding of RRA and its implications. Firstly, while this study focused on postgraduate students' perspectives, future research could incorporate educators' viewpoints on RRA. Exploring educators' experiences with RRA and how they perceive the challenges students face when implementing RRA could lead to a more holistic understanding. As this study explored a few areas of refining the design and application of RRA, future studies can delve into effective strategies for integrating RRA in a way that addresses the identified limitations, optimising the implementation

of RRA for future practitioners. Moreover, mixed-methods approaches can be employed in future research. Combining qualitative and quantitative methods can provide a deeper understanding of the identified pitfalls and areas of improvement. In future research, it may also be beneficial to extend the application of a theoretical framework beyond AT (Vygotsky, 1978) to encompass Engeström's (1999) Cultural Historical Activity Theory. By incorporating social, cultural, and historical factors, researchers could develop an RRA that is methodologically sound, culturally sensitive and contextually appropriate, leading to more equitable and effective assessment practices in higher education.

ACKNOWLEDGEMENT

REFERENCES

Anandi, R. P., & Zailaini, M. A. (2019). Using Rasch Model to assess self-assessment speaking skill rubric for non-native Arabic language speakers. *Pertanika Journal of Social Sciences & Humanities*, *27*(3), 1469-1480.

Andrade, H. L., & Du, Y. (2005). Student perspectives on rubric-referenced assessment. *Practical Assessment, Research & Evaluation, 10*(1) Article 3. https://doi.org/10.7275/g367-ye94

Bearman, M., & Ajjawi, R. (2021). Can a rubric do more than be transparent? Invitation as a new metaphor for assessment criteria. *Studies in Higher Education*, *46*(2), 359-368. https://doi.org/10.1080/03075079.2019.1637842

Bennett, C. (2016). Assessment rubrics: Thinking inside the boxes. *Learning and Teaching*, *9*(1), 50-72. https://doi.org/10.3167/latiss.2016.090104

Brinkmann, S. (2014). Unstructured and semi-structured interviewing. In P. Leavy (Ed.), *The Oxford Handbook of Qualitative Research* (pp. 277-299). https://doi.org/10.1093/oxfordhb/9780199811755.013.030

Brookhart, S. M. (2013). *How to create and use rubrics for formative assessment and grading*. ASCD.

Brookhart, S. M. (2018). Appropriate criteria: Key to effective rubrics. *Frontiers in Education*, *3*, Article 22. https://doi.org/10.3389/feduc.2018.00022

Bukhari, N., Jamal, J., Ismail, A., & Shamsuddin, J. (2021). Assessment rubric for research report writing: A tool for supervision. *Malaysian Journal of Learning and Instruction*, *18*(2), 1-43. https://doi.org/10.32890/mjli2021.18.2.1

Chowdhury, F. (2019). Application of rubrics in the classroom: A vital tool for improvement in assessment, feedback and learning. *International education studies*, *12*(1), 61-68. https://doi.org/10.5539/ies.v12n1p61

Cockett, A., & Jackson, C. (2018). The use of assessment rubrics to enhance feedback in higher education: An integrative literature review. *Nurse Education Today*, *69*, 8-13. https://doi.org/10.1016/j.nedt.2018.06.022

Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). Sage Publication.

Darus, S., Stapa, S. H., & Hussin, S. (2003). Experimenting a computer-based essay marking system at Universiti Kebangsaan Malaysia. *Jurnal Teknologi, 39*(1), 1-18. https://doi.org/10.11113/jt.v39.472

Engeström, Y. (1993). Developmental studies of work as a testbench of activity theory: The case of primary care medical practice. In S. Chaiklin & J. Lave (Eds.), *Understanding practice: Perspectives on activity and context* (pp. 64-103). Cambridge University Press. https://doi.org/10.1017/CBO9780511625510.004

Engeström, Y. (1999). Innovative learning in work teams: Analyzing cycles of knowledge creation in practice. In Y. Engeström, R. Miettinen, & R.-L. Punamäki (Eds.), *Perspectives on activity theory* (pp. 377-406). Cambridge University Press.

Fraile, J., Panadero, E., & Pardo, R. (2017). Co-creating rubrics: The effects on self-regulated learning, self-efficacy and performance of establishing assessment criteria with students. *Studies in Educational Evaluation*, *53*, 69-76. https://doi.org/10.1016/j.stueduc.2017.03.003

Francis, J. J., Johnston, M., Robertson, C., Glidewell, L., Entwistle, V., Eccles, M. P., & Grimshaw, J. M. (2010). What is an adequate sample size? Operationalising data saturation for theory-based interview studies. *Psychology and Health*, *25*(10), 1229-1245. https://doi.org/10.1080/08870440903194015

Hamilton, H., Gurak, E., Findlater, L., & Olive, W. (2000). *The confusion matrix*. https://www2.cs.uregina.ca/~hamilton/courses/831/notes/confusion_matrix/confusion_matrix.html

Holmstedt, P., Jönsson, A., & Aspelin, J. (2018). Learning to see new things: Using criteria to support pre-service teachers' discernment in the context of teachers' relational work. *Frontiers in Education, 3*, Article 54. https://doi.org/10.3389/feduc.2018.00054

Jonsson, A. (2014). Rubrics as a way of providing transparency in assessment. *Assessment & Evaluation in Higher Education*, *39*(7), 840-852. https://doi.org/10.1080/02602938.2013.875117

Kite, J., & Phongsavan, P. (2017). Evaluating standards-based assessment rubrics in a postgraduate public health subject. *Assessment & Evaluation in Higher Education*, *42*(6), 837-849. https://doi.org/10.1080/02602938.2016.1199773

Krueger, R. A. (2014). *Focus groups: A practical guide for applied research*. Sage publications.

Marques, J. F., & McCall, C. (2005). The application of interrater reliability as a solidification instrument in a phenomenological study. *The Qualitative Report, 10*(3), 439-462.

Matshedisho, K. R. (2020). Straddling rows and columns: Students' (mis)conceptions of an assessment rubric. *Assessment & Evaluation in Higher Education*, *45*(2), 169-179. https://doi.org/10.1080/02602938.2019.1616671

Ministry of Higher Education Malaysia. (2021). *Alternative Assessment in Higher Education: A Practical Guide to Assessing Learning.* Department of Higher Education Malaysia. https://utmcdex.utm.my/wp-content/uploads/2024/09/EBOOK-Alternative-Assessment-in-Higher-Education-2022.pdf

Mok, J. C. H., & Toh, A. A. L. (2015). Improving the ability of qualitative assessments to discriminate student achievement levels. *Journal of International Education in Business*, *8*(1), 49-58. https://doi.org/10.1108/JIEB-12-2013-0048

Noh, N. M., Zain, M. R. M., Hamid, Y. S., Bakar, I. A. A., & Mohamad, M. (2021). Analytic rubric in evaluating the continuous assessment in projects of civil engineering undergraduate students in dynamics subject. *Asian Journal of*

University Education, *17*(4), 352-366. https://doi.org/10.24191/ajue.v17i4.16221

Oakleaf, M. (2009). Using rubrics to assess information literacy: An examination of methodology and interrater reliability. *Journal of the American Society for Information Science and Technology*, *60*(5), 969-983. https://doi.org/10.1002/asi.21030

Panadero, E., & Jonsson, A. (2020). A critical review of the arguments against the use of rubrics. *Educational Research Review*, *30*, Article 100329. https://doi.org/10.1016/j.edurev.2020.100329

Panadero, E., & Romero, M. (2014). To rubric or not to rubric? The effects of self-assessment on self-regulation, performance and self-efficacy. *Assessment in Education: Principles, Policy & Practice*, *21*(2), 133-148. https://doi.org/10.1080/0969594X.2013.877872

Patton, M. Q. (2014). *Qualitative research & evaluation methods: Integrating theory and practice* (4th ed.). Sage Publications.

Pérez-Guillén, S., Carrasco-Uribarren, A., Celis, C. L., González-Rueda, V., Rodríguez-Rubio, P. R., & Cabanillas-Barea, S. (2022). Students' perceptions, engagement and satisfaction with the use of an e-rubric for the assessment of manual skills in physiotherapy. *BMC Medical Education*, *22*, Article 623. https://doi.org/10.1186/s12909-022-03651-w

Popham, W. J. (1997). What's wrong--and what's right--with rubrics. *Educational leadership*, *55*(2), 72-75.

Postmes, L., Bouwmeester, R., de Kleijn, R., & van der Schaaf, M. (2023). Supervisors' untrained postgraduate rubric use for formative and summative purposes. *Assessment & Evaluation*

in Higher Education, *48*(1), 41-55. https://doi.org/10.1080/02602938.2021.2021390

Sadler, D. R. (2014). The futility of attempting to codify academic achievement standards. *Higher Education*, *67*(3), 273-288. https://doi.org/10.1007/s10734-013-9649-1

Saeed, K. M., Ismail, S. A. M. M., & Eng, L. S. (2019). Malaysian speaking proficiency assessment effectiveness for undergraduates suffering from minimal descriptors. *International Journal of Instruction*, *12*(1), 1059-1076. https://doi.org/10.29333/iji.2019.12168a

Shadle, S. E., Brown, E. C., Towns, M. H., & Warner, D. L. (2012). A rubric for assessing students' experimental problem-solving ability. *Journal of Chemical Education*, *89*(3), 319-325. https://doi.org/10.1021/ed2000704

Sitorus, M. L. (2020). Non-native English teachers interpretation of rubrics used for assessing students' writing. *Proceedings of the International Conference on Future of Education*, *3*(2), 16-25. https://doi.org/10.17501/26307413.2020.3202

Terry, G., Hayfield, N., Clarke, V., & Braun, V. (2017). Thematic analysis. In C. Willig & W. Stainton-Rogers (Eds.), *The Sage handbook of qualitative research in psychology* (2nd ed., pp. 17-37). Sage.

Venning, J., & Buisman-Pijlman, F. (2013). Integrating assessment matrices in feedback loops to promote research skill development in postgraduate research projects. *Assessment & Evaluation in Higher Education*, *38*(5), 567-579. https://doi.org/10.1080/02602938.2012.661842

Vygotsky, L. S. (1978). *Mind and society: The development of higher mental processes*. Harvard University Press.

Sri Lankan Migrant Women's Uncertain COVID-19 Conditions in the Middle East

Mohamed Idrees Mohamed Aslam

Department of Sociology and Anthropology, International Islamic University Malaysia, Gombak, 53100 Kuala Lumpur, Selangor, Malaysia

ABSTRACT

The discrimination and exploitation encountered by Sri Lankan migrant women in the Middle East labour market have aggravated, which engenders significant challenges for numerous families, especially during the COVID-19 pandemic. The current study aims to explore Sri Lankan women's uncertain living conditions with families during the COVID-19 pandemic. A qualitative research method was employed to collect data through a semi-structured interview guide and produce a descriptive analysis using the thematic analysis technique. Purposive sampling was performed to recruit Sri Lankan migrant women who stayed with their respective families in Bahrain. A total of 13 online in-depth interviews were conducted. Resultantly, Sri Lankan migrant women experienced significant challenges during the pandemic due to frequent humiliation and termination by employers, which significantly increased the pressure of living. The crisis negatively impacted Sri Lankan migrant women's lives owing to increased family responsibilities, which led to high challenges in achieving a balance between work and family. Working in the Middle East and resettling in Sri Lanka were not as favourable as expected at their stage of work, which required them to adopt coping mechanisms to achieve their economic goal. However, the amount of relevant materials and social support for the migrant women was minimal. The present study advocates that women's right to work should be protected and that welfare organisations should be expanded to reach more vulnerable families. The current findings enriched the existing knowledge corpus by providing empirical evidence in the broader sociological field, which could assist policymakers and researchers in future migration studies.

INTRODUCTION

The coronavirus (COVID-19) disease outbreak in 2019 (Paterson-Young, 2021) significantly impacted over 769 million

individuals and caused approximately 6.9 million deaths worldwide as of August 2023 (World Health Organisation, 2023). The crisis has also significantly impacted billions of individuals' lives since the beginning of 2020, especially migrant workers with highly aggravated living conditions that received global attention. Most companies and house owners prevented minor workers from entering premises owing to the high concern of physically spreading the virus, which caused low-paid and foreign domestic workers to experience a significant loss of employment and income sources (Garfield et al., 2020; Jamil & Dutta, 2021). The ineffective management of the crisis by sending and receiving countries (Equidem, 2020) also engendered migrant workers, including Sri Lankans, to assemble in front of respective embassies to express personal discontent despite the severe COVID-19 consequences, which received great attention on social media.

Only a small body of literature exists on the experiences of Sri Lankan migrants during the COVID-19 pandemic. Ekanayake and Amirthalingam (2021) explored the financial issues experienced by professionals and skilled and semi-skilled Sri Lankan migrant workers in Qatar. Weeraratne (2020) examined skilled labourers' employment and wage issues in various destinations, including the Middle East. Nevertheless, past studies did not focus on the COVID-19 experiences of housemaids and low-skilled migrant women with family or undocumented migrants (Aslam et al., 2023) physically working at outdoor workplaces.

It is pertinent to note that Sri Lankan housemaids in the Middle East stay with employers and outside of the employers' homes (Frantz, 2008). The pandemic significantly impacted migrant women workers' daily lives and the economy, as their primary income source was labour force participation. Gender has become a crucial intersecting factor of several studies amid COVID-19, exploring the experiences of migrant women in various destinations. Direct and uneven financial effects during the pandemic pushed migrant women into extreme poverty (J. Smith et al., 2021). For example, unemployed female workers in Hong Kong relied on financial support from families back home and funding agencies (Milhaud, 2023). Women who experienced the career break caused by the pandemic faced long-term consequences. For instance, when Canada eased the pandemic restrictions in the Middle of 2020, re-employment rates increased twice as fast among men than women (Statistics Canada, 2020). Nevertheless, the lack of data impeded gender-based analysis during the COVID-19 pandemic.

Gunatilaka (2013) corroborated that Sri Lankan economic growth highly depends on increasing women's participation in the paid labour force. Particularly, socially constructed gender roles in Sri Lanka rapidly change due to globalisation and macroeconomic developments, which allow more women to participate in income-generating activities and community roles (Jayaweera & Dias, 2009). Additionally, female households become the primary

economic providers, which challenges the symbolic female role in household duties, such as childrearing, cooking, and caring for the elderly (Gamburd, 2000). The role reversal is more apparent among female migrant workers when migration could assist in reducing poverty while enhancing the family economy (Jayaweera & Dias, 2009). A report published by the Sri Lanka Bureau of Foreign Employment (SLBFE; 2023) depicts that, from 1993 to 1997, over 70% of females migrated. The proportion gradually decreased over the years, reaching 34.31% in 2017. Subsequently, a significant transition was observed in 2022, with 40% of females migrating from the total departure of 311,161 migrants, involving nearly 91% of females in the Middle East (SLBFE, 2023). Nonetheless, discrimination and exploitation of women persist in the labour market, which was exacerbated by the pandemic and became a common occurrence in daily life.

Unequal treatment based on gender mostly exists among female migrants in the emigrated countries. Prior scholars identified that women's vulnerabilities, such as lack of effective means against discrimination and low aspiration wages, were highly exploited by different industries to generate higher profits (Gunatilaka, 2013). Women were also perceived as a more manageable workforce segment. Most Sri Lankan female migrants also belonged to disadvantaged families or lived in vulnerable conditions and low-skilled categories in the emigrated destination (Ukwatta, 2010), which contributed to

higher exploitation by recruiters and employers (Amnesty International, 2014). Choudhury et al. (2024) confirmed that Bangladeshi women who migrated to Saudi Arabia with prosperous dreams returned to the country heartbroken due to the physical and verbal violence. Parrenas (2021) explored Filipino women whom their UAE employers deported for minor infractions, such as working slowly. Similar exploitative practices, including beating, scolding, and dehumanising treatment from respective employers, were experienced by the Sri Lankan migrants (Weeraratne, 2014). Moreover, being a temporary migrant or undocumented status was another cause for unequal treatment. Undocumented migrants were recruited by companies due to low wages (Khoso & Noor, 2021), which frequently occurred in Middle Eastern countries during the COVID-19 pandemic (Alsharif, 2022). The inhuman treatment encountered by female workers with the increasing demand for female domestic workers reflects the gender-based discriminatory practice among the transitory labour workforce. Yet, the implication of the COVID-19 pandemic on the well-being of migrant women with families has not received due attention from the existing knowledge and policymakers (Mueller et al., 2023).

Documenting relevant experiences of Sri Lankan migrant women during the COVID-19 pandemic could contribute to the existing literature on migration. Nevertheless, quantitative data on female workers staying with families and the exact

numbers of migrant workers were scarce in Sri Lanka (Ramanayake & Wijetunga, 2018). Studying Sri Lankan migrant women with families qualitatively among individual workers with high family expenses and family responsibilities in the emigrated nation could enrich the current knowledge corpus. Accordingly, 13 migrant women who stayed with families in Bahrain were interviewed. The main objective of this study is to complement previous findings by providing more empirical evidence on Sri Lankan migrant women's uncertain COVID-19 conditions in the Middle East.

Specific objectives of this study sought to:

1. Explore the intersection between the push migration factors and the economic and social precarity of migrant women with families in the Middle East during the COVID-19 pandemic.

2. Investigate the gendered effects of the COVID-19 pandemic.

3. Examine the migrant women's solutions to the COVID-19 Challenges in the Middle East.

LITERATURE REVIEW

Sri Lankan Migrant Women in the Middle East

This paper first draws on the literature on migrant women, reviewing push migration factors to evaluate the gender effects of the pandemic that hinder achieving the migration goal. The experiences of female migrants, who constitute approximately half of all international migrants, are the researchers' main focus (International Labour Organization, 2016). The findings of the International Labour Organization (ILO, 2021) reveal that 4.2 million women workers were recorded in Arab states in 2019. A total of three Asian Pacific countries supply domestic workers, namely the Philippines, Sri Lanka, and Indonesia (Piper, 2008). Sri Lanka provides multiple labourers, which is indicated by the increasing migration since 1976, when the Sri Lankan government lifted the restrictions on foreign employment. Subsequently, the government introduced a liberal economic policy in 1977, which allowed labourers to search for economic opportunities across national borders (Lakshman, 1993). Oil discovery in the Middle East and the persistent demand for Sri Lankan labourers to fill in developmental projects also promoted migration to the Middle East, which was regarded as an alternative economic avenue to resolve immediate economic challenges (Gamburd, 2000; Ukwatta, 2010). Furthermore, the pre-departure cost for female migrants is thrice cheaper than the cost for males, which is compensated by agents through migrants' advance payments received from the employers (Shaw, 2010). Hence, more Sri Lankan females have migrated to Middle Eastern countries.

Sriskandarajah (2002) demonstrated that the lack of domestic economic opportunities and development was the primary reason for labour emigration from Sri Lanka. Gunatilleke (1995) also observed that sluggish Sri Lankan economic growth and urbanisation engendered job seekers to wait

for a longer period to secure permanent employment, which resulted in rural-to-urban migration and, subsequently, urban-to-international migration. Withers and Piper (2018) discovered a similar pattern, in which women migrated from rural villages to urban Colombo due to the uneven development between rural and urban areas. The migrant women worked in the garment industry and as domestic workers before emigrating to other nations, owing to the lack of payment. Nonetheless, the migration rationales remained ambiguous despite poverty and unemployment as primary issues in the Sri Lankan urban, rural, and estate sectors (Central Bank of Sri Lanka, 2016). Hewage et al. (2011) demonstrated that migration motivations resulted from the desire to earn more money for family necessities and future investments, such as building a house, commencing business ventures, and educating children.

Previous Sri Lankan migration studies conducted among female workers consistently observed that the primary reason for migration was economic factors. Dharmadasa et al. (2018) revealed that low wages in the tea plantation sector compelled young females to alter personal income portfolios by incorporating non-farming income sources, primarily migrating to the Middle East. Abeyasekera (2010) also observed that young Muslim women sought employment in the Middle East to earn money for dowries, which is a common Sri Lankan cultural practice that requires females to pay a lump sum of money or property to the male partner during the marriage (Gamburd, 2000). Regmi et al. (2020) agreed that less educated young females from low-income families in Nepal preferred working in the unskilled category in Middle Eastern countries to support their families and repay debts. Similarly, Parrenas (2021) disclosed that family economic vulnerabilities are the primary push factor for migrating Filipino domestic workers to the UAE. The above studies mostly have focused on the experiences of individuals, and migrant women with families in the emigrated destinations have largely been ignored by the literature.

Migrants would utilise available migration resources to temporarily reunite with families in Middle Eastern countries (Gardner, 2011). Previous researchers denoted marriages as a means to form families among migrant workers in the transitional phase (Hart, 2007). Particularly, Sri Lankan female migrants acquired romantic relationships that led to marriage in the Middle East (Frantz, 2008; M. Smith, 2010). M. Smith (2010) observed that certain Sri Lankan women worked from outside arrangements in Lebanon due to the advantage of earning more money than in employers' homes and obtaining more freedom. Nevertheless, migrant women's families tend to be impoverished, which constitutes a significant segment of the migrant workers. The COVID-19 pandemic has substantial gendered repercussions and may deteriorate their career progression. However, the studies on migrant families were less informative.

Migrant Workers' Solutions to COVID-19 Challenges in the Middle East

The COVID-19 outbreak in the Middle East occurred when a Chinese family arriving in the United Arab Emirates (UAE) tested positive for COVID-19 at the end of January 2020 (Bashir et al., 2021). Curbing the COVID-19 pandemic was challenging in the Middle East as neighbouring countries are culturally and religiously sensitive, allowing inter-state travel and massive religious gatherings, such as the Hajj pilgrimage (Baloch et al., 2020). Every Gulf Cooperation Council (GCC) country has reported several COVID-19 cases since March 2020, which resulted in strict preventive measures to protect citizens (Al-Tammemi, 2020). For instance, Bahrain restricted public gatherings and issued workplace guidelines limiting worker density in the workspace (Alabdulkarim et al., 2021). The implemented preventive measures impacted the economy of migrant workers more extensively than the native community (Ekanayake & Amirthalingam, 2021).

The COVID-19 pandemic intensified multiple issues among Middle Eastern migrants, including work termination, unemployment, reduced salaries, depletion of savings, and insufficient health facilities (Tazyeen et al., 2022). Work resumption was expected to be delayed for several months or years as employers were concerned with the virus spreading among migrant workers. Jamil and Dutta (2021) highlighted that Bangladeshi workers in the Middle East remained unemployed and struggled to secure their current job, which was necessary for survivability. Consistent with the above study, Ansar (2023) confirms that unemployed Bangladeshi women in the Middle East returned empty-handed because they could not claim their unpaid salaries for several months. Ekanayake and Amirthalingam (2021) recorded that Sri Lankan migrants primarily depended on self-perpetuated coping mechanisms when the COVID-19 situation exacerbated, such as borrowing money from friends, selecting lower rental accommodation, and decreasing food expenses instead of seeking assistance from governmental and non-governmental agencies. Migrants were compelled to remain at their emigrated destinations and were subjected to living under the high pressure of personal expenses and transferring remittances to their home country.

Undocumented migrant workers were significantly impacted by unemployment and work termination during the COVID-19 pandemic. Alsharif (2022) discovered that undocumented migrants in Saudi Arabia were exploited by being recruited for low wages or without wages in a short period (Khoso & Noor, 2021). Similarly, female migrants without employment contracts and work permits worked in informal settings (Foley & Piper, 2021). Migrant women in an irregular migration status and employment without contracts were in constant apprehension of immigration detention due to the lack of legal documents to freely move across different workplaces

(Aslam et al., 2023). Consequently, migrant women could not access health facilities and maternity protection, which was further aggravated during the COVID-19 outbreak (Foley & Piper, 2021). Undocumented migrant workers, particularly women, had received less attention among welfare and anti-epidemic governance during the peak of COVID-19 (Milhaud, 2023; Zhang, 2024). The nature of undocumented migrants' work and lack of legal documents hampered them from employing support-seeking mechanisms. Being an employee in the informal sector would prevent one from accessing some 'social protection schemes,' such as wage subsidies (Mueller et al., 2023).

Additionally, migrant workers with families experienced more financial burdens, such as losing income and expenses in the migrated destination, as house rents, school fees, and other expenses remained unchanged during the pandemic (Khalaf, 2020). Substantial wage cuts or unemployment posed high challenges to migrants in paying house rentals punctually (Alsharif & Malit, 2020). Hashmi (2020) narrated the story of a pregnant woman in the UAE who was not recommended to travel after 33 weeks of pregnancy. The woman continued travelling as the woman's family lacked the necessary assistance, was homeless, and struggled with the expenditures of regular hospital visits and delivery due to the woman's husband's work termination. Migrant parents also struggled with their children's school fees, which compelled the parents to request fee waivers

or discounts from school authorities. Khalaf (2020) reported in the Financial Times that 13,900 parents of children in UAE private schools signed a petition demanding school fee discounts of 30% due to the high living costs while receiving significant pay cuts. In summary, the pandemic exacerbated the financial burdens of the migrant workers' and the daily lives of their families. However, studies have rarely considered the responses of women to the gendered effects of the pandemic.

Theoretical Framework

In this study, two factors are collectively studied: migration goals not achieved in the migrated destination and positive reconstruction of the surrounding world to achieve their migration target, where the coping mechanisms are employed. In order to guide the study on migrant women's uncertain COVID-19 conditions in the Middle East, the present study employs three theories, which are the push and pull migration theory (Lee, 1966), migration network theory (Massey et al., 1993), and social capital theory (Putnam, 1993).

Female members in the family migrate overseas, leaving their traditional gender roles, to attain the family's collective well-being and improve personal wealth (Gamlath, 2019). However, these women's future dreams are demolished by gender-based discrimination, which was further aggravated during the pandemic. Accordingly, the present study employed the push-and-pull migration theory to frame the initiation of the migration and discern

migration goals (Lee, 1966). According to this model, every act of migration involves an origin, a destination, and an intervening set of obstacles. This theory was compared with the migrant women's uncertain COVID-19 conditions.

Since labour force participation was the primary income source for many migrant women, returning to the country at their stage of work during the pandemic was considered a double burden as the country of origin had also been affected (Ekanayake & Amirthalingam, 2021). Undocumented migrant women remained silent and were unwilling to return to their country of origin (Aslam et al., 2023). Thus, coping with the gendered effects of the pandemic was a potential solution for many women. This research studies the coping mechanisms by incorporating migration network and social capital theories (Massey et al., 1993; Putnam, 1993). Migration network and social capital theories support one another. In the migration context, social capital is a key resource within the migration network. Putnam (1993) defined social capital in terms of economic development as the "features of social organisation, such as networks, norms, and trust, that facilitate coordination and cooperation for mutual benefit". Migrants potentially create new social networks with various migrant communities and strengthen the existing ones (Massey et al., 1993), all of which are considered social capital. This social capital aids in lowering the risks and achieving the migration goals.

METHODS

Study Approach

The present qualitative study on Sri Lankan Migrant women (MW) was conducted via the case study method. Given that this study aimed to investigate factors related to the gendered effects of the COVID-19 pandemic among MW, the qualitative inquiry that yielded various implications was considered a more appropriate approach. A qualitative study is generally conducted in a natural setting to understand and interpret individuals' personal experiences with respective connotations (Denzin & Lincoln, 2005). Accordingly, the present study appraised migrant women's experiences in terms of uncertain living conditions of families during the COVID-19 pandemic. The informants were migrant women (MW) who had resided with families in Bahrain for over six months. The total departure of 2922 migrant workers emigrated to Bahrain in 2018, with 33% of the migrants as housemaids (SLBFE, 2019). The MW with families in Bahrain were identified with assistance from Darul Iman Bahrain, a welfare organisation for Sri Lankans. The MW were recruited through purposive sampling and the snowball technique, which enabled the selection of unique informants who were informative and would assist in recruiting other MW. The first few informants were selected from the evidence provided by this organisation on how MW was affected by the COVID-19 pandemic. Table 1 depicts the informant characteristics.

Table 1
Informant characteristics

Document Name	Children In Bahrain	Husband's Nationality	Husband in Bahrain	Residence Type	Employment Type
MW1-Sara	Yes	Sri Lankan	No (Separated)	Rented Home	Office In-Charge
MW2-Jazeera	Yes	Indian	No (Separated)	Sharing Home	Babysitting
MW3-Nisa	Yes	Indian	Yes	Rented Home	Caretaker
MW4-Sama	Yes	Indian	Yes	Sharing Home	Housemaid
MW5-Zameela	Yes	Bahraini	Yes	Husband's Home	Taxi Rider
MW6-Simaya	Yes	Pakistani	Yes	Rented Home	Housemaid
MW7-Mary	No	Indian	Yes	Rented Home	Part-Time Works
MW8-Amaliya	No	Sri Lankan	Yes	Rented Room	Home Nurse
MW9-Rubini	Yes	Sri Lankan	No (Separated)	Rented Room	Housemaid
MW10-Naja	Yes	Sri Lankan	Yes	Rented Home	Part-Time Works
MW11-Arsana	No	Sri Lankan	Yes	Sharing Home	Housemaid
MW12-Sheema	Yes	Pakistani	Divorced	Sharing Home	Part-Time Cleaning
MW13-Dilini	Yes	Indian	Yes (Separated)	Rented Home	Part-Time Cleaning

MW interviewed for this study were sole economic providers for their families. Most MW's families resided in shared and self-rented houses in commercial and residential areas to search for employment within a shorter distance. The MW primarily worked in precarious jobs, such as maids, babysitting, childcare, taxi riders, and daily paid work. The MW were unemployed during the interview except for two respondents. The MW's families stayed in Bahrain, and most had more than two years of working experience. An MW did not engage in contract work after arriving in Bahrain due to the pandemic outbreak, and job recruiters did not provide a secure workplace. Three MW couples left children behind, whereas the remaining nine MW lived with children in Bahrain. Six MW formed a family either with Pakistani or Indian workers, while one MW with a Bahraini. Four MW were without male companionship due to separation or divorce. The researcher received repeated information, reflecting the achievement of data saturation after interviewing the 13 informants.

Data Collection

In-depth interviews, which lasted an average of one hour, were conducted with MW from December 2020 to August 2021 via a semi-structured interview guide consisting of questions on the experiences of MW during the pandemic. The researcher was accompanied by the spouse in the discussion as certain Muslim women were restricted from meeting male strangers without husbands or close male guardians (*Mahram* in the Arabic language). Conducting interviews with MW was effortless as the MW were not monitored by employers. When the information sheet and consent form were submitted requesting permission

to meet for an interview, many expressed fears about face-to-face interaction during the pandemic. Therefore, all interviews were conducted on two online platforms, namely Zoom and WhatsApp, with the informants' consent due to pandemic restrictions. To avoid audio interruptions, a supporting mobile data package for online conversation was activated for those who cannot afford it. Participants were informed of the potential risks, nature of the research, benefits, and the right to withdraw from the interview. The researcher assured the confidentiality and protection of the participant's anonymity. Recording was also performed after obtaining approval from the participants. The ethical processes assisted in establishing sufficient trust between the researcher and the participants.

Data Analysis

A thematic approach on the ATLAS.ti software was conducted to present the findings. In particular, recorded interviews were transcribed and perused to determine the actual meaning of the responses. The transcribed interviews were fed to the software to highlight codes found in the data. The digital coding procedure eliminated redundancies and allowed the individual codes in the documents to be grouped into code groups based on some fundamental categories, such as income, legal status, gender, and family structure. For example, the theme of work instability and exploitation was created using four codes: extra work, wage delay, physical

torture, and no legal status. The data were analysed by organising categories and building networks between codes based on relevant themes for corresponding narratives and detailed interpretations. Due to the methodological constraints that the qualitative study demands, such as face-to-face interaction and participant observation, which the pandemic restricted, the data obtained was triangulated with previous findings in this context.

FINDINGS

Migrant Women During the COVID-19 Pandemic

Migrants arriving in a foreign country anticipated a stable job with a regular income through labour force participation in the productive work environment to support families, which was the primary migration goal. Migrants believed that jobs in the Middle Eastern sectors would be abundant and would assist in resolving domestic economic challenges. Nonetheless, the COVID-19 pandemic significantly and negatively impacted migrant workers' economies. Figure 1 depicts theme categories on migrant women's uncertain COVID-19 conditions. As illustrated in Figure 1, the current findings delineated the circumstance based on three main themes, namely 'want to work!' that described the living pressures, 'but we cannot work' that elucidated work challenges, and 'migrant women's solutions to the COVID-19 challenges' that explicated the barriers in seeking assistance and recognition from the community.
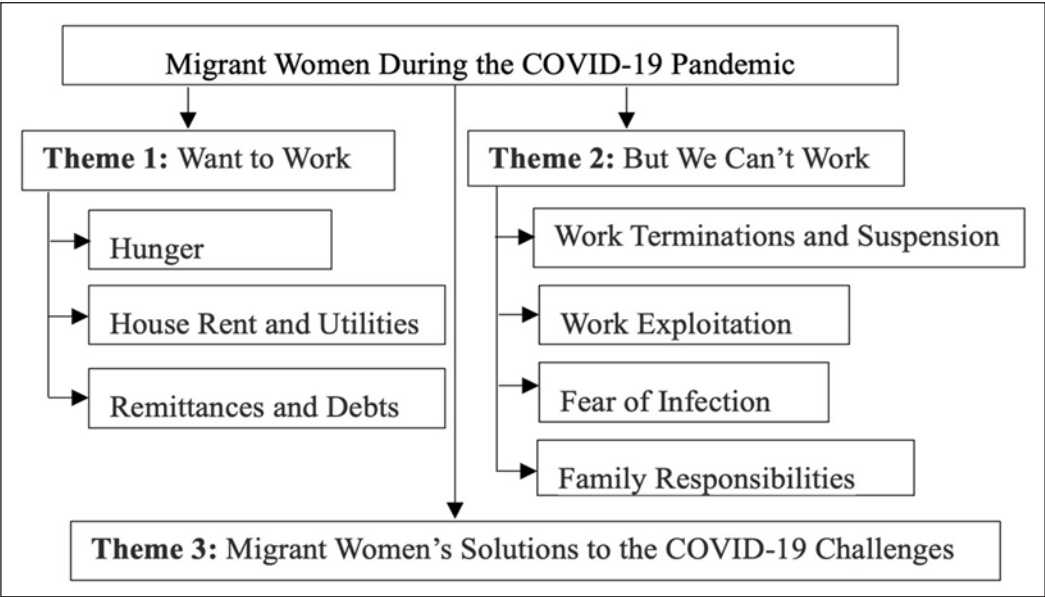
Figure 1. Theme categories on migrant women's uncertain COVID-19 conditions

Main Theme 1: Want to Work!

The MW were deprived of employment essential to supporting their families, thus leading to significantly reduced wages. Furthermore, daily requirements, payments, and debts remained unchanged. The average income of MW's families ranged between 280BD ($743) and 300BD ($796) in a regular work period. However, only the spouses working or single-parent families earned below the average income amount. Work termination and suspensions, which were highly implemented during the COVID-19 pandemic, significantly impacted family savings and expenses. Terminated MW lost all earnings, whereas suspended MW continued receiving salary for food expenses despite the amount being insufficient for all payments and expenses.

Both terminated and suspended MWs were highly pressured to work due to hunger, rent, and remittances.

Hunger

Hunger was a recurring issue in most lower-class families during the COVID-19 pandemic. The migrants lost daily income due to the work turbulence, which significantly impacted the immediate need for sustenance. Sama described that:

> *I had only coffee for my breakfast. I only have rice to cook for lunch* (MW4).

Food was the primary expenditure in daily life. Nevertheless, most lower-income families could not afford sufficient food. The mothers were highly concerned with the starving children owing to negatively

impacted income sources. Most MWs relied on daily work, and the COVID-19 pandemic decreased the regular earnings of the MW and corresponding family members. Rubini shared her story on the encountered economic stress:

> *I struggled with my daily expenses for five months without a job due to Corona. Sometimes, we eat two times a day, skipping dinner or breakfast* (MW9).

During the pandemic, every MW experienced hunger regardless of income level. Staying with families led to higher living costs than the MW's income. Consistent with the above findings, Azeez et al. (2021) found that many migrant mothers in India were at risk of being unable to feed their children. During the pandemic, families spent less on their daily needs due to the loss of income sources (Abdullah et al., 2022).

House Rent and Utilities

The second pressure on MW was the cost of accommodation and utilities. The MW spent an average of 100BD ($265) for a room, 160BD ($424) for a shared home, and 220BD ($584) for a self-rented house without compensation during the pandemic. Naja explained that:

> *We spend two-thirds of our earnings or more on rent and utilities* (MW10).

Sara was required to pay rent of 250BD ($663) and approximately 90BD ($239) for monthly utilities. She covered 180BD

($478) from renting two rooms in her home. Nonetheless, the tenants vacated the rooms during the pandemic. Sara possessed a higher burden of paying rent as searching for new tenants was challenging during the pandemic. Furthermore, tenants must pay electricity and water bills on time. Electricity is a necessity in the Middle Eastern environment with summer and winter. The present study discovered that the MW's families failed to secure personal salaries and encountered disrupted utilities by the Electricity and Water Authority (EWA). Nisa expressed her fear:

> *The fact is that without electricity and water, we cannot survive. Last month we experienced a cut off in the electricity service* (MW3).

Remittances and Debts

The migrants' primary goal was to secure a productive job to save and remit money to their home country. The MW were the sole economic providers for the natal families and families in Bahrain. The MW was required to allocate money for both families when receiving the monthly salary. The pressure on remitting money significantly increased when the families in Sri Lanka required financial support. Nevertheless, remittances did not happen as expected during the COVID-19 pandemic. For instance, Sama lived with her children in Bahrain, married an Indian, and performed remittances occasionally:

> *Sometimes, I send money to my parents, but it was not possible during this pandemic* (MW4).

Amaliya was compelled to remit monthly to her parents, wherein the amount was significantly reduced after experiencing the pay cut:

> *I need to send money to my parents. I only sent half of them during this pandemic* (MW8).

Repaying debts was another pressure for MW during the pandemic. Numerous Sri Lankan women selected Middle Eastern employment to repay debts (Gamburd, 2016). Furthermore, certain MWs were required to repay debts created by the emigration to Bahrain, which caused multiple families to incur additional burdens. However, repaying the loans was delayed due to the pay cuts and unemployment. The MW required work due to high expenses and being pressured to remit money. Nevertheless, the working sectors were negatively impacted by the COVID-19 pandemic while the expenses remained the same.

Main Theme 2: But We Cannot Work!

Certain factors hindered MW from working despite significant financial pressures.

Work Terminations and Suspensions

The MW experienced significant challenges during the COVID-19 pandemic, including work terminations and suspensions. Certain MW were under formal employment contracts while other counterparts worked from outside arrangements without legal employment visas. Employers neglected the MW working under employment contracts during the pandemic. For example, Arsana was a housemaid under an employment visa to work part-time while staying with her husband. Arsana's employer terminated her employment due to the fear of the COVID-19 outbreak. Arsana was not under the responsibility of the visa provider or the previous employer during the interview. Arsana expressed that:

> *Arbab (Boss) stopped me due to the fear of spreading the disease (COVID-19). I have a visa bought from a sponsor, but it expires soon. I should find work to survive here* (MW11).

The MW encountered significant economic challenges when employers suspended the MW from entering homes or workplaces due to personal hygiene factors and fear of infection. Jazeera, a mother of three children, worked as a part-time housemaid on contract for two families. Both families prevented Jazeera from working due to the fear of infection, which generated no income. Another participant described that the employer halted employment until the situation resumed at the pre-pandemic level, which reduced half of the MW's salary. The informant delineated that:

> *Since the beginning of spreading the disease, I have been at home. I cannot survive with half my salary* (MW13).

The MW was motivated to emigrate due to economic factors in the country of origin, such as low income, unemployment, and scarcity of jobs. Thus, acquiring employment was vital upon arriving at emigrated destinations or terminating previous contract

work. The MW's experiences demonstrated the significant challenge of fulfilling family expenses during the pandemic when most MWs were deprived of regular income. The undocumented MW were also afraid of their undocumented status. As Pandey et al. (2021) found that in the USA, domestic workers were hesitant to report inhuman treatment due to fear of losing their jobs. Losing a job during the pandemic means losing one's work permit, accommodation facilities, and regular income, as the work permit is tied to one's sponsors (Foley & Piper, 2021). The findings revealed that both documented and undocumented MW were terminated or suspended by employers without providing proper employment rights, such as salary or employment benefits. Consistent with the above findings, a study in Thailand discovered that Myanmar female workers were stigmatised and refused by employers (Chuemchit et al., 2024). The impact of work stress on the well-being of working women should be investigated more to retain employees (Zulkifli & Hamzah, 2024).

Work Exploitation

The work environment was not conducive due to being unstable and exploitative. MWs' work was highly demanded, but many were not fairly remunerated (Pandey et al., 2021). Numerous MWs feared the work environment during the pandemic, as employers would assign additional work, which resulted in resignation. Employers required workers to perform cleaning and washing daily within a limited period:

We should do extra cleaning during the pandemic, sometimes more than needed. People want us to be machines (MW7).

Certain MWs did not possess valid visas and performed all available jobs without concerns about health issues during the COVID-19 pandemic, although the jobs were compensated with low wages. Specifically, the MW performed cleaning in shops owned by Pakistanis and Indians. Employers would occasionally exploit MW by assigning additional tasks without paying corresponding wages, as the MW possessed no legal status to complain to authorities, including the police, due to visa issues. The MW encountered high difficulties in avoiding the exploitative work environment. Overwork, wage issues, and physical torture were common and became more evident during the pandemic. Simaya explicated about the employment conditions of an Indian shop owner:

I have been at home for more than ten months. I worked extra hours but could not get my salary during the pandemic. How can we complain without a visa? (MW6).

Fear of Infection

Certain MWs terminated their existing jobs due to health concerns, similar to the employers. The MW were cautious about spreading the virus when staying with family members, which posed an additional burden to the family. Certain women also utilised public transportation to reach the

workplace, which was highly risky due to the pandemic. For instance, Naja was concerned about work safety during the surge of COVID cases, which elevated the possibility of virus transmission in public transport. Taxi services were also suspended for similar reasons. Zameela was a taxi rider and a self-employed woman who voluntarily stopped work due to the fear of infection. Zameela and the family were also infected by COVID-19, wherein Zameela was required to depend on the husband's income:

> *No taxi hires due to the high infections. I am avoiding the hires because we have already suffered from the coronavirus* (MW5).

The MW, who worked in Arabian kitchens, was not provided with the necessary equipment to protect from COVID-19 infection. Employers also did not assist the MW in undergoing proper medication after being infected (Ansar, 2023). Utilising formal medical treatment was infeasible due to the MW's undocumented status. The MW would be reported to the police, and legal action would be taken against the MW regarding the illegal stay. Consequently, the MW lost the right to work in a protected environment.

Family Responsibilities

The MW's family responsibilities increased due to living with families. The husbands, who shared house chores before the COVID-19 pandemic, were more engaged in the workforce during the pandemic. The MW, who lived with children, would avoid staying at employers' homes as being responsible for children. Nisa depicted that:

> *My husband works overtime these days to earn more. Always, either one needs to stay with our autistic son. Mostly, I am with him. I cannot work Full-time* (MW3).

Some MWs without children were interviewed in this study. Certain employers were ready to allow the MW without children to stay at employers' homes based on urgent needs but with restrictions. Amaliya was allowed to work as a home nurse to care for an older woman under the condition of not being allowed to meet the husband physically:

> *I agreed to work without meeting my husband, as I was pressured to pay my debts* (MW8).

Certain single mothers struggled to balance work and family responsibilities. Jazeera, who lived with adult children, was the sole economic provider for the family and was required to return home daily to care for the children:

> *I cannot stay anywhere far from my children. Usually, I return home in the evening.* (MW2)

The MWs with families were burdened with dual roles: paid work and household duties. The pandemic increased husbands' working times, which compelled women to spend more time at home taking care of the children. As found in Malaysia, childcare was shouldered mainly by women in the

family during the pandemic (Chelliah et al., 2023). Single mothers also struggled to manage work and household duties. During the outbreak of the pandemic, childcare facilities were closed (Fodor et al., 2021), which overburdened female-headed families. Certain MWs sacrificed family lives to earn sufficient salaries.

Main Theme 3: Migrant Women's Solutions to the COVID-19 Challenges

Emigrating to a foreign country isolated migrants from extended families in Sri Lanka, which engendered high reliance on the social support of the community in the emigrated destination. Nevertheless, the received social support at the emigrated destination was significantly reduced by the COVID-19 pandemic. The disruption in regular government and civil organisations' services and restriction of movement worsened the risk of violence against women and prevented them from receiving timely assistance (Ansar, 2023; Chuemchit et al., 2024). Numerous individuals and organisations constantly monitored the situation and assisted vulnerable families negatively impacted by the pandemic. The support was only limited to food, although the MW concurrently encountered other challenges. Sara described:

> *We received food from some individuals and Darul Iman because they knew about our situation* (MW1).

While the funding organisations were willing to assist vulnerable groups, migrants were reluctant to approach the organisations owing to multiple rejections. Simaya expressed that:

> *After reviewing many documents during my third attempt, one organisation accepted my application* (MW6).

Migrants could seek assistance for payments and other necessities from wealthy individuals. Nonetheless, the limited accessibility compelled the MW to seek support via formal channels. Most migrants could only receive support from individuals with whom the migrants were familiar. The MW were less inclined to seek assistance from other individuals multiple times due to the fear of stigmatisation:

> *I am too nervous to ask for help from others. If they understand my situation and help, then I will accept* (MW12).

Certain undocumented migrants were highly vulnerable and feared being reported to the police, especially when seeking assistance from other individuals and organisations. The legal barrier prevented migrants from seeking support during the pandemic. Rubini stated that:

> *I approached one organisation, but they asked for many details. I worried about giving too much information about myself. I came without getting their help* (MW9).

Coping with the COVID-19 pandemic was a significant challenge for MW, who continuously waited until certain individuals were identified and assisted with the encountered challenges. Minimal assistance

was obtained owing to the ineffective migration network. Moreover, immediate barriers, such as lacking legal documents and fear of stigmatisation, prevented MW from seeking support from other individuals and organisations.

DISCUSSION

The Middle East has been a temporary work destination for Sri Lankan MW for over four decades, where emigrated families possess a temporary life separated from extended families in Sri Lanka. The MW participating in the current study agreed to emigrate by ignoring personal desires while focusing on the aspects that would benefit children and families in the long term. The MW emigrated after resolving different obstacles, including family commitments, lack of skills, low education, and debts. The primary income source at the emigrated destination was labour activities, which was the major migration goal to be achieved. Neetha (2004) concluded that female migration was a breakthrough, as they worked as the primary breadwinners in the household and shouldered the entire family burden. Women's participation in the labour market demonstrated that women were empowered to be equal to men in achieving economic goals. However, more dialogues are also required on the exploitation causes for low-wage workers at the emigrated destinations (Zimmerman & Kiss, 2017), which allows policymakers and migrated-related organisations to ensure that women work in highly protected work environments. Jayaweera and Dias (2009)

observed that the bilateral agreements signed by sending and labour-receiving countries did not adequately protect Sri Lankan migrants' employment rights. The challenges encountered by MW should be underscored to increase the effectiveness of the policies formulated by the governments.

Female workers' lives in the Middle East were not as favourable as expected, owing to several challenges, such as exploitation, sexual harassment, and verbal and physical torture (Frantz, 2008; Gamlath, 2019; Hewage et al., 2011). Discrimination and exploitation became regular occurrences in daily life, which was reflected during the COVID-19 pandemic. This study's findings revealed that more than the fear of infection, work instability and exploitation were major hindrances that prevented women from labour force participation. Madgavkar et al. (2020) also demonstrated that women's working sectors were impacted more than men's during the pandemic, which exacerbated existing vulnerabilities. In addition, a study in Hong Kong (Lui et al., 2021), findings on Bangladeshi women in Saudi Arabia (Ansar, 2023), and evidence found among female workers in Thailand (Chuemchit et al., 2024) revealed that employers overworked domestic workers and did not provide sufficient health facilities during the working and quarantine period. Overall, domestic work, which was in high demand in the Middle East, remained a devalued occupation (Choudhury et al., 2024; Pandey et al., 2021). Precarity among Asian migrants is an ongoing phenomenon (Asis et al., 2019).

The MW with families encountered more challenges during the COVID-19 pandemic, including the inability to cover family expenses, balancing work and family, lack of work security, and fear of stigmatisation, apart from the existing difficulties in terms of unstable work conditions that negatively impacted income and well-being.

This study also discovered that a stable income source was pivotal to sustaining a family in a foreign country when the MW stayed with families, as in the theme 'want to work!' discovered. Most families struggled to cover daily expenses, house rent, and utilities, which engendered multiple issues, including mental stress (Lui et al., 2021). Certain MWs in the present study were pressured to work when their husbands, who were also exploited by low-paid employment, could not support the family. Furthermore, the theme 'but we cannot work' elaborated that MW was burdened with more family responsibilities as the husbands were more engaged in the workforce, which significantly altered the role division in the family. Accepting more family responsibilities while coping with work was challenging, particularly for single mothers who could not effectively integrate career and childcare, as observed in the United States of America during the COVID-19 pandemic (Alon et al., 2020). Moreover, MW was not skilled in immediately responding to fluctuating work environments, which caused the MW to earn insufficiently for families from highly feminised jobs in oil-rich countries (Gulati, 1997). The MW were required to stay with families, regardless of the consequences of family migration. Caring for the families was vital, especially after establishing a family with a foreign worker and being undocumented while simultaneously acting as primary breadwinners. The MW's family responsibilities should be recognised by providing adequate labour protection to achieve migration goals of protecting the well-being of families. Policies should be drawn by labour-sending and receiving countries to protect MW who lose their jobs by giving unemployment benefits and wage subsidies to low-paid women.

The remittances to the home country and savings in the local bank were significantly lower during the pandemic when the pressure of debts and remittances remained the same. Remittances from migrant workers would significantly contribute to local development, as Sri Lanka was a labour-sending country. Ekanayake and Amirthalingam (2021) and Weeraratne (2020) demonstrated that the flow of remittances to Sri Lanka from Middle Eastern migrants significantly declined due to pay cuts and work terminations. Thus, numerous MWs are highly dependent on help-seeking strategies to resolve the pandemic challenges. However, the weaker social capital that MW had heightened the gendered effects of the COVID-19 pandemic. Meanwhile, the social support received from the government and welfare organisations was minimal. While certain welfare organisations were committed to aiding vulnerable migrants, the MW were less exposed to the public and less

frequently approached the organisations due to their illegal status. Working in the informal sector substantially hinders the creation of strong migration networks (Mueller et al., 2023). Burton-Jeangros et al. (2020) discovered that undocumented migrants were silent workers unwilling to expose personal issues to the public due to security reasons, which aggravated subsequent challenges encountered by the migrants. Menjívar and Salcido (2002) revealed that undocumented MW were reluctant to seek support, while Mona et al. (2021) discovered that migrants refrained from seeking healthcare due to the fear of being tracked by the police. This study adds knowledge to the literature in exploring the gendered effects of the COVID-19 pandemic by examining the intersection between MW and undocumented status. However, the present study suggests exploring the undocumented MW by focusing on the long-term consequences they face due to the pandemic.

CONCLUSION

This research has identified the uncertain working sectors of women and the economic downturn that these women experienced during COVID-19. Bahrain was selected as the case study to exemplify MW's challenges with sufficient empirical evidence. The present study conducted in-depth interviews with 13 migrant women who lived with families to understand the COVID-19 experiences thoroughly. The present study implies that similar to the studies on migrant workers, migration studies with the inclusion of families are parallelly important, which was stressed by this study. As per the obtained data, it was apparent that their arrival in Bahrain was challenging, and often, all the positive prospects that they were pulled for were non-existent. The discrimination and exploitation that MWs encounter are recurrent issues which were exacerbated during COVID-19. Furthermore, promptly deciding to resettle in the origin country at their stage of work was found would not be practical since being undocumented and primary breadwinners. The MW was required to stay with families, regardless of the consequences of family migration, since pushing factors still prevailed and were aggravated during the pandemic. Thus, coping with the challenges to achieve economic well-being was vital for MW. Nevertheless, MW had a poor network with the public and government agencies to mitigate their challenges. The challenges led to minimal assistance being received by the migrants despite welfare organisations continuously aiding migrants to relieve economic hardship. Hence, these migrant women should be more empowered, and their labour rights should be protected by labour-sending and receiving countries. Future studies could explore the long-term gendered effects of the pandemic and the coping mechanisms adopted by MW based on different demographics.

Study Limitations

The actual number of migrant families or legal methods to approach MW and corresponding families in the Middle East was unavailable. Certain families were less inclined to assist in searching

for other families to participate in in-depth investigations due to the lack of legal documents. This study did not identify MW by participating in migrants' gatherings and workplaces, as the traditional qualitative study performs, due to the pandemic restrictions. The limitations could impede the researcher's engagement with more participants. The limited number of participants might also be a limitation, although the current study employed the case study method to explore MW's living experiences. Due to these methodological constraints, this study does not claim the universality of the problem faced by MW during the pandemic. Future studies could include more participants from different geographical locations to ensure outcome validity.

ACKNOWLEDGEMENT

REFERENCES

Abdullah, N., Hashim, N. Z. I., Abidin, I. S. Z., & Shazali, S. M. M. (2022). Impact of COVID-19 Pandemic in Malaysia: A critical survey. *Pertanika Journal of Social Sciences and Humanities*, *30*(4), 1857-1879. https://doi.org/10.47836/pjssh.30.4.20

Abeyasekera, A. L. (2010). Youth mobility and overseas migration in Sri Lanka. In R. Gunathilaka, M. Mayer, & M. Vodopivec (Eds.), *The challenges of youth employment in Sri Lanka* (pp. 139-168). The World Bank.

Alabdulkarim, N., Altwaijri, N., Alsultan, F., Albaradie, R. S., & Bashir, S. (2021). Perspective of Covid-19 pandemic in Middle East countries. *Journal of Family Medicine and Primary Care*, *10*(4), 1534-1539. https://doi.org/10.4103/jfmpc.jfmpc_2025_20: 10.4103/jfmpc.jfmpc_2025_20

Alon, T., Doepke, M., Olmstead-Rumsey, J., & Tertilt, M. (2020). *The impact of COVID-19 on gender equality* (NBER Working Paper No. 26947). National Bureau of Economic Research. https://doi.org/10.3386/w26947

Alsharif, F. (2022). Undocumented migrants in Saudi Arabia: COVID-19 and amnesty reforms. *International Migration*, *60*(1), 188-204. https://doi.org/10.1111/imig.12838

Alsharif, F., & Malit, F. T., Jr. (2020). *Migration and the COVID-19 pandemic in the Gulf: A Study of foreign expatriate worker communities' coping attitudes, practices, and future prospects in Dubai and Jeddah* (Policy Report No. 15). https://www.kas.de/documents/286298/8668222/Policy+Report+No+15+Migration+and+The+COVID-19+Pandemic+in+the+Gulf.pdf/87dd88bd-ed47-41c7-be23-48c5a5eb8d7c?version=1.0&t=1603448109241

Al-Tammemi, A. B. (2020). The battle against COVID-19 in Jordan: An early overview of the Jordanian experience. *Frontiers in Public Health*, *8*, Article 188. https://doi.org/10.3389/fpubh.2020.00188

Amnesty International. (2014). *'My Sleep is My Break' Exploitation of migrant domestic workers in Qatar*. https://www.amnesty.org/en/documents/mde22/004/2014/en/

Ansar, A. (2023). Bangladeshi women migrants amidst the COVID-19 pandemic: Revisiting globalization, dependency and gendered precarity in South–South labour migration. *Global Networks, 23*, 31-44. https://doi.org/10.1111/glob.12368

Asis, M. M. B., Piper, N., & Raghuram, P. (2019). From Asia to the world: "Regional" contributions

to global migration. *Revue Européenne des Migrations Internationales*, *35*(1-2), 13-37. https://doi.org/10.4000/remi.12450

Aslam, M. I. M., Eid, I. M. Y., & Rokis, R. (2023). Coping with exploitative labour conditions: A case of Sri Lankan migrants in Bahrain. *IIUM Journal of Human Sciences*, *5*(1), 1-17. https://doi.org/10.31436/ijohs.v5i1.274

Azeez, E. P. A., Negi, D. P., Rani, A., & A P, S. K. (2021). The impact of COVID-19 on migrant women workers in India. *Eurasian Geography and Economics*, *62*(1), 93-112. https://doi.org/10.1080/15387216.2020.1843513

Baloch, Z., Ma, Z., Ji, Y., Ghanbari, M., Pan, Q., & Aljabr, W. (2020). Unique challenges to control the spread of COVID-19 in the Middle East. *Journal of Infection and Public Health*, *13*(9), 1247-1250. https://doi.org/10.1016/j.jiph.2020.06.034

Bashir, S., Alabdulkarim, N., Altwaijri, N., Alhaidri, N., Hashim, R., Nasim, E., Mir, A., Albaradie, R., Habib, S. S., & Abualait, T. (2021). The battle against the COVID-19 pandemic- a perspective from Saudi Arabia. *One Health*, *12*, Article 100229. https://doi.org/10.1016/j.onehlt.2021.100229

Burton-Jeangros, C., Duvoisin, A., Lachat, S., Consoli, L., Fakhoury, J., & Jackson, Y. (2020). The impact of the Covid-19 pandemic and the lockdown on the health and living conditions of undocumented migrants and migrants undergoing legal status regularization. *Frontiers in Public Health*, *8*, Article 596887. https://doi.org/10.3389/fpubh.2020.596887

Central Bank of Sri Lanka. (2016). *Sri Lanka socio-economic data 2016*. https://www.cbsl.gov.lk/sites/default/files/cbslweb_documents/statistics/Sri_Lanka_%20Socio_Economic_Data_2016_e.pdf

Chelliah, H. D., Boo, H. S., & Karupiah, P. (2023). Gender, ethnicity and unpaid domestic work before and during the COVID-19 pandemic in Malaysia. *Pertanika Journal of Social Sciences*

and Humanities, *31*(3), 975-993. https://doi.org/10.47836/pjssh.31.3.04

Choudhury, T., Morad, M., & Dellapuppa, F. (2024). Lacerated minds, stolen dreams: Experiences of Bangladeshi women migrants in Saudi Arabia. *International Sociology*, *39*(1), 50-70. https://doi.org/10.1177/02685809231207035

Chuemchit, M., Linn, N., Pyae Han, C. P., Lynn, Z., Chernkwanma, S., Taneepanichskul, N., Sirichokchatchawan, W., & Somrongthong, R. (2024). Discrimination and violence against women migrant workers in Thailand during the COVID-19 pandemic: A mixed-methods study. *PLoS ONE*, *19*(5), Article e0300388. https://doi.org/10.1371/journal.pone.0300388

Denzin, N. K., & Lincoln, Y. S. (2005). *The Sage handbook of qualitative research* (3rd ed.). SAGE Publications.

Dharmadasa, R. A. P. I. S., Weerahewa, J., & Samarathunga, P. A. (2018). Labor migration and impact of remittances on poverty and income inequality: Evidence from estate sector of Sri Lanka. *Tropical Agricultural Research*, *30*(1), 69-83. https://doi.org/10.4038/tar.v30i1.8279

Ekanayake, A., & Amirthalingam, K. (2021). The economic impact of the Covid-19 pandemic on Sri Lankan migrants in Qatar. *Comparative Migration Studies*, *9*, Article 38. https://doi.org/10.1186/s40878-021-00246-0

Equidem. (2020). *The cost of contagion: The human rights impacts of COVID-19 on migrant workers in the Gulf*. https://respect.international/wp-content/uploads/2020/11/The-cost-of-contagion.pdf

Fodor, É., Gregor, A., Koltai, J., & Kováts, E. (2021). The impact of COVID-19 on the gender division of childcare work in Hungary. *European Societies*, *23*(S1), S95-S110. https://doi.org/10.1080/14616696.2020.1817522

Foley, L., & Piper, N. (2021). *Covid-19 and women migrant workers: Impacts and implications*. International Labour Organization. https://doi.org/10.36004/nier.cdr.2021.15-03

Frantz, E. (2008). Of maids and madams: Sri Lankan domestic workers and their employers in Jordan. *Critical Asian Studies*, *40*(4), 609-638. https://doi.org/10.1080/14672710802505323

Gamburd, M. R. (2000). *The kitchen spoon's handle: Transnationalism and Sri Lanka's migrant housemaids*. Cornell University Press.

Gamburd, M. R. (2016). Sri Lankan migration from Sri Lanka to the Gulf: Female breadwinners and domestic workers. In P. C. Jain & G. Z. Oommen (Eds.), *South Asian Migration to Gulf Countries: History, Policies, Development* (pp. 226-246). Routledge. https://doi.org/10.4324/9781315684338

Gamlath, S. (2019). Survival or building-up strategy: A case study in Sri Lanka on the link between initial condition for labour migration and the benefits for families and community. *The International Journal of Community and Social Development*, *1*(2), 145-168. https://doi.org/10.1177/2516602619853411

Gardner, A. M. (2011). Gulf migration and the family. *Journal of Arabian Studies*, *1*(1), 3-25. https://doi.org/10.1080/21534764.2011.576043

Garfield, R., Rae, M., Claxton, G., & Orgera, K. (2020). *Double jeopardy: Low wage workers at risk for health and financial implications of COVID-19.* KFF. https://www.kff.org/coronavirus-covid-19/issue-brief/double-jeopardy-low-wage-workers-at-risk-for-health-and-financial-implications-of-covid-19/

Gulati, L. (1997). Asian women in international migration: With special reference to domestic work and entertainment. *Economic and Political Weekly*, *32*(47), 3029-3035.

Gunatilaka, R. (2013). *Women's participation in Sri Lanka's Labour force: Trends, drivers and constraints*. International Labour Organization.

Gunatilleke, G. (1995). The economic, demographic, sociocultural and political setting for emigration from Sri Lanka. *International Migration*, *33*(3-4), 667-697. https://doi.org/10.1111/j.1468-2435.1995.tb00037.x

Hart, K. (2007). Love by arrangement: The ambiguity of "spousal choice" in a Turkish village. *Journal of the Royal Anthropological Institute*, *13*(2), 345-362. https://doi.org/10.1111/j.1467-9655.2007.00438.x

Hashmi, S. (2020, May 16). *Coronavirus leaves Gulf migrant workers stranded*. BBC. https://www.bbc.com/news/world-middle-east-52655131

Hewage, P., Kumara, C., & Rigg, J. (2011). Connecting and disconnecting people and places: Migrants, migration, and the household in Sri Lanka. *Annals of the Association of American Geographers*, *101*(1), 202-219. https://doi.org/10.1080/00045608.2010.532741

International Labour Organization. (2016). *Decent work for migrant domestic workers: Moving the agenda forward*. https://www.ilo.org/global/topics/labour-migration/publications/WCMS_535598/lang--en/index.htm%0Ahttps://www.ilo.org/global/topics/labour-migration/publications/WCMS_535596/lang--en/index.htm

International Labour Organization. (2021). *ILO Global Estimates on International Migrant Workers: Results and Methodology*. https://www.ilo.org/sites/default/files/wcmsp5/groups/public/@dgreports/@dcomm/@publ/documents/publication/wcms_808935.pdf

Jamil, R., & Dutta, U. (2021). Centering the margins: The precarity of Bangladeshi low-income migrant workers during the time of COVID-19. *American Behavioral Scientist*, 1-22. https://doi.org/10.1177/00027642211000397

Jayaweera, S., & Dias, M. (2009). Gender roles and support networks of spouses of migrant workers. In *Gender and labour migration in Asia* (pp. 43-115). International Organization for Migration.

Khalaf, R. (2020, April 8). Expats in Dubai call for cut in their children's school fees. *Financial Times*, 1-8. https://www.ft.com/content/c9f83ca9-9107-436f-864b-da1b7e28f56f

Khoso, A., & Noor, A. H. M. (2021). Migrant workers in Malaysia: Covid-19's impact on the

rights of their children and siblings in Pakistan. *International Journal of Children's Rights*, *29*(2), 475-495. https://doi.org/10.1163/15718182-29020008

Lakshman, W. D. (1993). The Gulf Crisis of 1990-91: Economic impact and policy response in Sri Lanka. In P. Wickramasekara (Ed.), *The Gulf Crisis and South Asia: Studies on the economic impact* (1st ed., pp. 144-171). International Labour Office.

Lee, E. S. (1966). A theory of migration. *Demography*, *3*(1), 47-57. https://doi.org/10.2307/2060063

Lui, I. D., Vandan, N., Davies, S. E., Harman, S., Morgan, R., Smith, J., Wenham, C., & Grépin, K. A. (2021). "We also deserve help during the pandemic": The effect of the COVID-19 pandemic on foreign domestic workers in Hong Kong. *Journal of Migration and Health*, *3*, Article 100037. https://doi.org/10.1016/j.jmh.2021.100037

Madgavkar, A., White, O., Krishnan, M., Mahajan, D., & Azcue, X. (2020). *COVID-19 and gender equality: Countering the regressive effects*. McKinsey Global Institute.

Massey, D. S., Arango, J., Hugo, G., Kouaouci, A., Pellegrino, A., & Taylor, J. E. (1993). Theories of international migration: A review and appraisal. *Population and Development Review*, *19*(3), 431-466. https://doi.org/10.2307/2938462

Menjívar, C., & Salcido, O. (2002). Immigrant women and domestic violence - Common experiences in different countries. *Gender and Society*, *16*(6), 898-920. https://doi.org/10.1177/089124302237894

Milhaud, N. (2023). *Stranded in Hong Kong: The plight of domestic workers during COVID-19-Ariana Life*. Ariana. https://arianalife.com/stranded-in-hong-kong-the-plight-of-domestic-workers-during-covid-19-ariana-life/

Mona, H., Andersson, L. M. C., Hjern, A., & Ascher, H. (2021). Barriers to accessing health care among undocumented migrants in Sweden - a principal component analysis. *BMC Health Services Research*, *21*(1), 1-11. https://doi.org/10.1186/s12913-021-06837-y

Mueller, V., Páez-Bernal, C., Gray, C., & Grépin, K. (2023). The gendered consequences of COVID-19 for internal migration. *Population Research and Policy Review*, *42*(4), Article 60. https://doi.org/10.1007/s11113-023-09809-8

Neetha, N. (2004). Making of female breadwinners: Migration and social networking of women domestics in Delhi. *Economic and Political Weekly*, *39*(17), 1681-1688.

Pandey, K., Parreñas, R. S., & Sabio, G. S. (2021). Essential and expendable: Migrant domestic workers and the COVID-19 pandemic. *American Behavioral Scientist*, *65*(10), 1287-1301. https://doi.org/10.1177/00027642211000396

Parrenas, R. (2021). The mobility pathways of migrant domestic workers. *Journal of Ethnic and Migration Studies*, *47*(1), 3-24. https://doi.org/10.1080/1369183X.20201744837

Paterson-Young, C. (2021). Covid-19: Emerging needs for unemployed and economically inactive individuals. *Community, Work & Family*, *24*(5), 507-511. https://doi.org/10.1080/13668803.2021.1931032

Piper, N. (2008). Feminisation of migration and the social dimensions of development: The Asian case. *Third World Quarterly*, *29*(7), 1287-1303. https://doi.org/10.1080/01436590802386427

Putnam, R. (1993). The prosperous community: Social capital and public life. *The American Prospect*, *4*(13), 35-42.

Ramanayake, S. S., & Wijetunga, C. S. (2018). Sri Lanka's labour migration trends, remittances and economic growth. *South Asia Research*, *38*(3_suppl), 61S-81S. https://doi.org/10.1177/0262728018792088

Regmi, M., Paudel, K. P., & Bhattarai, K. (2020). Migration decisions and destination choices. *Journal of the Asia Pacific Economy*, *25*(2), 197-226. https://doi.org/10.1080/13547860.2019.1643195

Shaw, J. (2010). From Kuwait to Korea: The diversification of Sri Lankan labour migration. *Journal of the Asia Pacific Economy*, *15*(1), 59-70. https://doi.org/10.1080/13547860903488237

Smith, J., Davies, S. E., Feng, H., Gan, C. C. R., Grépin, K. A., Harman, S., Herten-Crabb, A., Morgan, R., Vandan, N., & Wenham, C. (2021). More than a public health crisis: A feminist political economic analysis of COVID-19. *Global Public Health*, *16*(8-9), 1364-1380. https://doi.org/10.1080/17441692.2021.1896765

Smith, M. (2010). Erasure of sexuality and desire: State morality and Sri Lankan migrants in Beirut, Lebanon. *Asia Pacific Journal of Anthropology*, *11*(3), 378-393. https://doi.org/10.1080/144422 13.2010.511630

Sri Lanka Bureau of Foreign Employment. (2019). *Statistics 2019*. http://www.slbfe.lk/wp-content/uploads/2023/09/Statistics-2019.pdf

Sri Lanka Bureau of Foreign Employment. (2023). *Statistics 2022*. https://www.slbfe.lk/wp-content/uploads/2023/09/Statistics-2022.pdf

Sriskandarajah, D. (2002). The migration-development nexus: Sri Lanka case study. *International Migration*, *40*(5 Special issue 2), 283-307. https://doi.org/10.1111/1468-2435.00220

Statistics Canada. (2020, June 5). *Labour Force Survey, May 2020* [Press release]. https://www150.statcan.gc.ca/n1/en/daily-quotidien/200605/dq200605a-eng.pdf?st=TmRIDS5f

Tazyeen, S., Khan, H., Babar, M. S., & Lucero-Prisno, D. E. (2022). Foreign workers in the Middle East during COVID-19. *The International Journal of Health Planning and Management*, *37*(3), 1199-1204. https://doi.org/10.1002/hpm.3403

Ukwatta, S. (2010). Sri Lankan female domestic workers overseas: mothering their children from a distance. *Journal of Population Research*, *27*, 107-131. https://doi.org/10.1007/s12546-010-9035-0

Weeraratne, B. (2014). *Sri Lankan female domestic workers in the Middle East: Does recruitment through an agent minimize vulnerability?* Institute of Policy Studies of Sri Lanka. https://www.ips.lk/wp-content/uploads/2017/01/SL-Female-Domestic-Workers-in-ME.pdf

Weeraratne, B. (2020). *Sri Lankan migrants abroad: Results from a rapid online survey during the spread of COVID-19*. Institute of Policy Studies of Sri Lanka.

Withers, M., & Piper, N. (2018). Uneven development and displaced care in Sri Lanka. *Current Sociology Monograph*, *66*(4), 590-601. https://doi.org/10.1177/0011392118765240

World Health Organisation. (2023). *WHO Coronavirus (COVID-19) dashboard*. Latest reported counts of cases and deaths, and transmission classification. Retrieved June 8, 2024, from https://covid19.who.int/WHO-COVID-19-global-table-data.csv

Zhang, L. (2024). Outbreak narrative: China's migrant women labor in the COVID-19. *City, Culture and Society*, *37*, Article 100577. https://doi.org/10.1016/j.ccs.2024.100577

Zimmerman, C., & Kiss, L. (2017). Human trafficking and exploitation: A global health concern. *PLoS Medicine*, *14*(11), 1-11. https://doi.org/10.1371/journal.pmed.1002437

Zulkifli, S. S., & Hamzah, H. (2024). Work outcomes and well-being among working women: A systematic literature review. *Pertanika Journal of Social Sciences and Humanities*, *32*(2), 437-464. https://doi.org/10.47836/pjssh.32.2.05

Factors Influencing the Service Quality for Customer Satisfaction on Parcel Service Safety in the Postal and Courier Industry: Analysis Using Structural Equation Modelling

Zuraimi Abdul Aziz[1]*, Nik Syuhailah Nik Hussin[1], Dzulkifli Mukhtar[2], Nurnaddia Nordin[1] and Nurhaiza Nordin[1]

[1]Department of Logistics and Operations Management, Faculty of Entrepreneurship and Business, Universiti Malaysia Kelantan, 16100 Kota Bharu, Kelantan, Malaysia
[2]Department of Entrepreneurship and Industry, Faculty of Entrepreneurship and Business, Universiti Malaysia Kelantan, 16100 Kota Bharu, Kelantan, Malaysia

ABSTRACT

In the courier sector, the effectiveness and dependability of the last-mile delivery phase are crucial factors in determining the total quality of service provided to customers. Courier services are also expected to provide valuable service quality to their customers. Even though the growth trend is encouraging, many courier companies find it difficult to capitalise on the rising demand for their services because of intense competition and industry pressure to reduce service rates. As customer expectations continue to rise, companies are exploring innovative solutions to improve last-mile delivery. Therefore, the study aims to determine how specific dimensions of service quality affect customer satisfaction in the courier industry. A convenient sampling approach was employed to gather data from 245 respondents who completed a survey questionnaire for this study. Further, hypotheses were tested through a quantitative method using partial least square structural equation modelling (PLS-SEM). This research revealed an insignificant effect of reliability, responsiveness and tangibility on customer satisfaction. In contrast, empathy and assurance were found to have a significant and positive effect on customer satisfaction. These findings establish a foundation for more in-depth research on how last-mile delivery contributes to customer satisfaction.

Keywords: Courier service, customer satisfaction, last mile delivery, postal, courier service, service quality

INTRODUCTION

Within the quickly changing courier sector, the last mile delivery stage is a crucial point that greatly influences the total level of service that clients receive. The rapid expansion of global e-commerce underscores the crucial importance of a smooth and efficient last-mile delivery process. This aspect of logistics plays a pivotal role in ensuring customer satisfaction, as timely and accurate deliveries directly influence customer perceptions and brand loyalty. Efficient last-mile delivery enhances the overall parcel delivery experience and contributes to the operational efficiency of e-commerce businesses by reducing costs and improving resource allocation. The last mile is the final portion of a parcel's trip from distribution hubs to the end user, and it presents some special obstacles. The success or failure of the delivery process is frequently decided at this phase. Given the current customer expectations about timely delivery and improved experiences, it is critical for industry stakeholders to comprehend the subtleties of the aspects influencing service quality at the last mile.

The courier sector is still navigating digital difficulties, the e-commerce package market's rapid growth, which has increased industry competitiveness, and the old core business of letter delivery's inevitable decline as communications shift online. This is partially because Malaysia offers a large amount of untapped potential for the growth of the e-commerce industry, in addition to having a stronger internet connection, a high mobile penetration rate, and improved

security. The booming e-commerce market has significant prospects for supply chain businesses, such as courier companies that offer parcel delivery services (Siali et al., 2018). In recent years, the proliferation of courier services has been largely fuelled by the rising demand for online shopping (Ejdys & Gulc, 2020). There is fierce competition among Malaysia's courier service providers since the sector is headed towards becoming a competitive market. Malaysia is home to many domestic and foreign businesses, all of which strive to increase their market share in this sector. The growing popularity of online shopping and the sporadic massive e-marketplace discount days, driven by digitally connected customers who are always looking for lower prices, including product and delivery charges, greater convenience, and a seamless experience, coincided with the courier service providers improving their services and handling.

Service providers are fortifying their positions and pursuing expansion by investing in e-commerce logistics, such as the use of cutting-edge logistic technologies and revitalising the supply delivery system, to match this demand and stay competitive in the difficult market. Courier services have evolved from door-to-door to self-service using information technology and sophisticated logistical solutions as a result of technological advancements (PwC, 2019). Alongside the country's e-commerce industry, the courier business is growing rapidly, generating significant earnings for the industry. The country's e-commerce business is growing at an exponential

rate, which presents both possibilities and problems for online merchants and logistics companies. The growth of e-commerce is the main factor driving the courier industry.

The modern customer is becoming more conscious of their rights. Customers today expect courier services to provide high-quality service. The amount of shipping faults and complaints, punctuality, efficacy of delivery (number of shippers' returns and refusals to accept products), and delivery (delayed delivery) are all factors that affect expected quality. Courier services strive to reduce per-mile transportation costs, cut transit times, and adjust to the unique demands of their clients in order to provide superior customer service (Marcysiak, 2021). The ongoing process of contact between customers and the courier service should flow easily across a variety of channels, including both functional and emotional ones, to produce a positive experience for the customer. The courier service industry must strike a balance between operational limitations and customer satisfaction as e-commerce demand increases (Siali et al., 2018).

Traditional service quality assessment frameworks, such as SERVQUAL, have been widely adopted in various industries (Karim, 2020; Owusu-Kyei et al., 2023; Rane et al., 2023; Zygiaris et al., 2022). However, their application to the postal and courier service sector often overlooks critical variables unique to the industry. For instance, customers in this sector place heightened importance on factors like real-time tracking, delivery reliability, and

sustainable practices, which are not explicitly addressed in the original SERVQUAL model. Therefore, the study refines and extends the SERVQUAL model to address this industry-specific, incorporating the measurement for each dimension that reflects the unique operational demands and customer expectations of the postal and courier service industry. By modifying a widely used framework to better align with sector-specific challenges, the research advances the theoretical understanding of service quality, especially in industries where traditional models may fall short. These added measurements offer a refined approach to measuring customer satisfaction on parcel service safety in contexts that require high logistical precision, real-time information, and eco-conscious practices.

Service quality remains a critical determinant of customer satisfaction and loyalty in the postal and courier industry. Traditional frameworks, such as SERVQUAL, provide a structured method for evaluating service quality; however, their generalised nature may not fully capture the sector's distinct challenges. This study explores the adaptation of SERVQUAL to better align with the unique characteristics of this industry, addressing a gap in theoretical and practical applications. The SERVQUAL model, developed by Parasuraman et al. (1988), evaluates service quality across five dimensions: tangibles, reliability, responsiveness, assurance, and empathy. While extensively applied across various industries, studies reveal limitations in its direct applicability to sectors with complex

operational dynamics, such as postal and courier services. Recent research highlights the growing importance of incorporating industry-specific variables, especially in the context of technological advancements and shifting consumer demands.

As such, the present study aims to conduct a thorough investigation to ascertain, evaluate, and comprehend the principal factors that influence service quality in the setting of last-mile delivery. This investigation focuses on empathy, reliability, assurance, responsiveness and tangible service rendered by the courier providers. This study intends to address existing issues and present a forward-looking plan for improving last-mile delivery procedures by clarifying the elements that affect service quality in the last mile.

LITERATURE REVIEW

Research Framework

Customer perception of service quality is a crucial indicator of company performance and competitive position. In the courier sector, it is acknowledged as a major factor that influences competitive advantage. The last-mile delivery phase in the courier industry has garnered significant attention due to its pivotal role in determining overall service quality. As customer expectations evolve, understanding the multifaceted factors that influence service quality in the last mile becomes imperative for industry stakeholders. The ability to provide higher-quality services can help service industries make rapid progress. In essence, there is a difference between the quality of a service

and the expectations of its customers regarding its performance. Since it provides insightful information about how customers perceive services, the concept of service quality continues to be an important field of research in marketing (Uzir et al., 2021).

This study incorporates SERVQUAL into our theoretical framework, in line with Parasuraman et al. (1991a). According to Parasuraman et al. (1988), SERVQUAL is a useful instrument for assisting organisations in their quest for quality improvement by emphasising areas that have a major impact on improvement. Many industries have embraced the SERVQUAL paradigm as a means of measuring the quality of their services. SERVQUAL is the most widely used model in the service industry to assess customer satisfaction and service quality (Karim, 2020). According to Parasuraman et al. (1985), SERVQUAL is a useful instrument for assisting organisations in their quest for quality improvement by emphasising areas that have a major impact on improvement. In this study, the following five dimensions stemming from SERVQUAL are adopted in the model: empathy, reliability, assurance, responsiveness, and tangible. Empathy is the capacity to genuinely understand and address the needs, desires, and challenges of customers. It involves more than acknowledging their concerns; it requires actively relating to their issues, showing care, and delivering meaningful solutions (Hossain & Rahman, 2022). As Zhang et al. (2023) highlight, empathy plays a crucial role in improving service performance by encouraging customer-focused actions. This

entails providing personalised attention and a deep understanding of consumer needs, which is vital to a successful service strategy. In the context of last-mile delivery, empathy translates into creating customised delivery experiences that align with individual customer preferences.

For instance, AI-driven personalisation enables consumers to tailor their delivery experiences by offering options such as selecting specific delivery time windows or choosing preferred drop-off locations. These features enhance convenience and convey a sense of understanding and care, which customers often perceive as highly empathetic. Research indicates that such personalised options significantly foster customer loyalty and satisfaction (Chen et al., 2024; Muthukalyani, 2023). Beyond personalisation, companies also integrate value-added services to demonstrate empathy in more tangible ways. Services such as assembling furniture at the delivery location or collecting returns directly from customers' doorsteps go beyond the basic act of delivering a package. These thoughtful gestures reflect a deeper understanding of consumer needs, creating a more meaningful and supportive relationship. By integrating empathy into their operations, businesses are better positioned to enhance customer experiences, build trust, and establish long-term loyalty.

Reliability refers to a service provider's capacity to consistently and honestly deliver agreed goods and services (Marcysiak, 2021). Reliability is the capacity to consistently provide promised services precisely and timely (Parasuraman et al., 1988). When reliable services are offered, customers will be satisfied. Reliability in last-mile delivery is a critical factor that emphasises the timely and accurate delivery of parcels to end customers. Achieving this goal requires addressing a range of challenges, from meeting delivery schedules to minimising errors. Advanced technological solutions, such as AI-driven route optimisation, real-time traffic prediction, and dynamic fleet management systems, have proven instrumental in maintaining on-time performance, even during peak demand periods (Al-Daradkah, 2024). These innovations enable logistics providers to navigate unpredictable conditions efficiently and fulfil customer expectations. Beyond timeliness, reliability also hinges on minimising delivery errors, including misrouted packages or damaged goods, which can erode customer trust. Automation in warehouse operations, powered by robotics and machine learning, has played a transformative role in reducing sorting and handling errors. By streamlining these processes, automation ensures higher accuracy and consistency (Sodiya et al., 2024). Emerging technologies like drone deliveries and autonomous vehicles further enhance the potential for reliable last-mile solutions. These innovations are particularly valuable for addressing logistical challenges in remote or densely populated urban areas, where traditional delivery methods may falter. While still in their early stages, pilot implementations of these technologies demonstrate significant promise in achieving

near-perfect reliability, paving the way for a more efficient and dependable future in last-mile logistics.

Assurance refers to the sense of safety, trust, and confidence that service providers instil in their customers. This encompasses guarantees and key attributes such as professionalism, capability, kindness, security, and authenticity. The expertise and demeanour of staff play a critical role in delivering assurance, as customers rely on their professionalism and knowledge to feel confident about the services they receive. Building trust and fostering confidence are fundamental aspects of this process, as Crossley et al. (2023) highlighted. Assurance involves meeting customer needs promptly and effectively. Timeliness is a key factor, but responsiveness also includes attentiveness to customer preferences, proper scheduling, resolving issues efficiently, and ensuring secure and convenient transactions (Parasuraman et al., 1991a). For example, AI-driven systems now play a pivotal role in enhancing assurance by providing accurate delivery estimates and transparent tracking. Platforms leveraging machine learning to generate reliable Estimated Time of Arrivals (ETAs) significantly reduce uncertainty and enhance customer confidence (Solanki & Jadiga, 2024).

As digital platforms increasingly dominate last-mile delivery operations, ensuring the security of transactions and protecting personal data has become essential to maintaining customer trust. Secure payment gateways, encryption protocols, and other robust data protection measures

are now industry standards, underscoring the commitment to safety and reliability. Moreover, the courtesy and competence of delivery personnel are vital contributors to assurance. Well-trained delivery agents who exhibit professionalism and empathy reinforce customer trust. Companies are investing in training programs focused on soft skills, empowering staff with real-time support tools to address customer concerns effectively and efficiently (Sobaih & Alsaif, 2023). Together, these measures create a comprehensive framework for assurance, ensuring customers feel confident and valued throughout the service experience.

Responsiveness reflects the eagerness and ability of service providers to assist customers promptly and effectively. It encompasses management efficiency, attentiveness to customer demands and preferences, practical business hours, and a genuine focus on customer well-being (Setiono & Hidayat, 2022). Responsiveness is not merely about reacting to requests but demonstrating a proactive willingness to address customer needs with speed and precision (Yang et al., 2024). Flexibility in delivery options, such as same-day or one-hour delivery, is a hallmark of responsiveness. These services cater to modern consumers' expectations for convenience and immediacy. Advanced AI tools play a pivotal role in enabling such flexibility, allowing logistics companies to allocate resources dynamically and reroute deliveries in response to real-time changes in demand (Vrhovac et al., 2024). This adaptability ensures that customer

needs are met promptly, even in the face of fluctuating circumstances. AI-driven solutions also enhance responsiveness in customer interactions. Automated systems like chatbots manage a significant portion of consumer inquiries, delivering instant answers to questions about delivery status, delays, or other concerns. By handling routine issues, these tools allow human agents to focus on resolving more complex problems, creating a seamless service experience. Proactive measures, powered by predictive analytics, further amplify responsiveness. For instance, companies can anticipate potential disruptions, such as delays caused by weather or traffic and take pre-emptive actions to mitigate their impact. This foresight reduces the likelihood of customer complaints and fosters trust and loyalty by demonstrating a commitment to delivering reliable service (Rane et al., 2024). By combining speed, flexibility, and proactive problem-solving, responsiveness emerges as a key driver of customer satisfaction and loyalty in modern service environments.

Tangible in-service delivery refers to the physical and visual aspects that customers interact with, shaping their perception of professionalism and quality. In the context of courier and last-mile delivery services, tangibility encompasses factors such as the professionalism of the delivery staff, their attire, the condition of the delivery vehicle, and the physical state of the packaging. Whether staff are dressed appropriately and maintain a polished demeanour and whether deliveries arrive pristine condition significantly influence customer impressions (Parasuraman et al., 1988). Historically, tangible elements included clean and well-maintained delivery vehicles, professional uniforms, and branded packaging. These continue to play a vital role as they reflect the reliability and quality of the service. However, in the era of e-commerce, tangibility has expanded to include digital touchpoints such as mobile apps and websites. High-quality, user-friendly platforms with real-time tracking capabilities and comprehensive order management tools now serve as critical tangible elements. Research shows that seamless navigation and advanced tracking features enhance customer convenience and build trust and satisfaction (Wu & Rojniruttikul, 2024). Moreover, packaging has evolved to meet modern consumer expectations. Beyond aesthetics, it increasingly incorporates functional attributes such as eco-friendly materials and tamper-proof designs. These features resonate with environmentally conscious customers and those concerned with the security of their parcels. As sustainability becomes a priority, companies adopting innovative packaging solutions are perceived more positively, further strengthening their brand image. Overall, the tangible in last-mile delivery extends beyond physical appearances to include digital and functional elements, collectively shaping the customer experience and influencing their perception of service quality. Based on the literature review, we develop a research framework, namely, the customer satisfaction on parcel service safety research framework, which is illustrated in Figure 1.
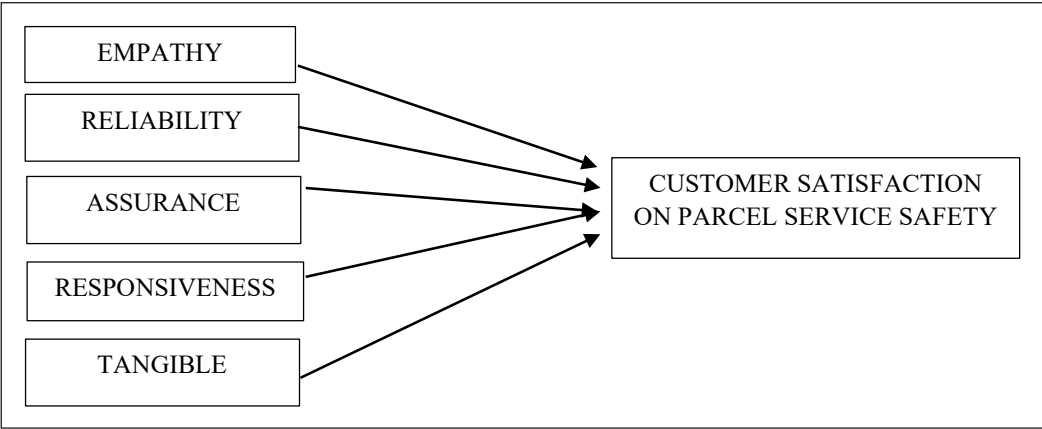
Figure 1. Customer satisfaction on parcel service safety research framework

Hypotheses Development

There is no agreement on the link between customer satisfaction and service quality (Dam & Dam, 2021; Nguyen et al., 2020). Customer satisfaction has become a primary goal for many enterprises. Companies can enhance and refine their service quality by analysing customer satisfaction, leading to better overall customer experiences. This focus on satisfaction allows businesses to understand customer needs and expectations more clearly, which is critical for improving service delivery and maintaining a competitive edge (Sun & Pan, 2023). According to Parasuraman et al. (1985), the level of service quality is determined by the gap between the customer's expectations prior to receiving the service and their perceptions of the service performance during the service process. Lai et al. (2022) utilised the SERVQUAL model to demonstrate the significance of service quality to businesses by confirming an apparent relationship between customer satisfaction and service quality of express delivery companies. They also showed

that tangibility, reliability, responsiveness, assurance and other dimensions have different influences on customer satisfaction and customer loyalty.

Empathy is the ability to provide caring and individualised attention to customers. In last-mile delivery, empathy can be demonstrated by understanding and accommodating specific customer needs or preferences, such as delivery time windows or special handling instructions. Personalised service enhances customer satisfaction by making customers feel valued and understood (Hossain & Rahman, 2022). According to Zygiaris et al. (2022), there is a notable relationship between empathy and customer satisfaction. This relationship is crucial as it underscores the importance of personalised interactions and attentive service in building and maintaining customer satisfaction. In the context of last-mile delivery, Hossain and Rahman (2022) highlighted that empathy reflects a service provider's capability to relate to customer concerns, respond to preferences, and deliver tailored solutions. Modern consumer

expectations, driven by the rapid growth of e-commerce, have elevated the demand for highly personalised and responsive delivery experiences. Technological innovations, such as AI-driven personalisation and drone deliveries, further amplify the role of empathy by enabling service providers to anticipate and address customer needs effectively. AI tools enhance the customer experience by offering features like real-time tracking, predictive delivery times, and automated assistance, which convey attentiveness and care (Chen et al., 2024). Drone deliveries and autonomous vehicles also expand the scope of empathetic service by ensuring timely and efficient delivery, particularly in remote or high-demand areas, meeting consumer expectations for speed and reliability (Muthukalyani, 2023). Thus, we proposed the following hypothesis:

H1: Empathy has a positive impact on customer satisfaction.

Reliability in last-mile delivery is crucial as it involves the ability to perform promised services dependably and accurately. This includes on-time delivery, accurate order fulfilment, and consistent service quality, all building customer trust and ensuring expectations are met or exceeded. A reliable delivery service is essential for maintaining customer satisfaction, which directly impacts the overall customer experience (Klein & Popp, 2022). The relationship between reliability and customer satisfaction in last-mile delivery is crucial for maintaining customer loyalty and enhancing overall customer experience. Reliability in this context involves consistently delivering packages on time, accurately fulfilling orders, and maintaining high-quality service standards. Studies have shown that reliability is a key determinant of customer satisfaction in last-mile delivery services. For instance, research highlights that timeliness and reliability are significant factors influencing customer satisfaction in e-retail experiences. Reliable last-mile delivery builds customer trust by ensuring that deliveries are made as promised, which directly impacts customer perceptions and satisfaction levels (Olsson et al., 2023).

Technological advancements, such as AI-driven route optimisation and real-time traffic prediction, have significantly improved the reliability of last-mile delivery. These innovations ensure timely and efficient deliveries by dynamically adjusting routes and schedules to adapt to changing conditions (Islam et al., 2024). Moreover, automation in warehouse operations, enabled by robotics and machine learning, has reduced errors in sorting and handling, further enhancing the reliability of service delivery. Emerging technologies like drone deliveries and autonomous vehicles add another layer of reliability by addressing logistical challenges in remote or congested areas. These innovations provide consistent and predictable delivery performance, aligning with modern consumer expectations for speed and accuracy (Muthukalyani, 2023). Accordingly, the following hypotheses are asserted:

H2: Reliability has a positive impact on customer satisfaction.

Assurance relates to the knowledge and courtesy of employees and their ability to convey trust and confidence. In last-mile delivery, assurance can be reflected in the professionalism of delivery staff, secure handling of packages, and clear communication regarding delivery status. Customers who feel confident in the service are more likely to be satisfied (Olsson et al., 2023). Assurance, which involves the knowledge and courtesy of employees and their ability to convey trust and confidence, is critical to customer satisfaction in last-mile delivery. In the context of delivery services, assurance can include factors such as the professionalism of delivery personnel, clear communication regarding delivery status, and the perceived security of the delivery process. Several studies have highlighted the importance of assurance in enhancing customer satisfaction in last-mile delivery. For instance, research by Fernandes et al. (2018) emphasises that logistic service quality, including assurance, significantly mediates the relationship between logistics capabilities and customer satisfaction. Similarly, Balinado et al. (2021) found that key service quality dimensions, such as assurance, positively impact customer satisfaction.

Additionally, a study by Park and Yi (2021) using the SERVPERF model revealed that assurance and other service quality dimensions play a crucial role in shaping customer perceptions and satisfaction levels. These findings collectively suggest that ensuring high levels of assurance in last-mile delivery operations can lead to higher customer satisfaction by instilling confidence and trust in the service provided. As e-commerce continues to grow, consumer expectations for reliable and secure services have become more pronounced. Therefore, AI technologies enhance assurance by providing accurate delivery estimates, real-time tracking, and proactive communication about delays or disruptions, which reduce uncertainty and enhance trust (Islam et al., 2024). Similarly, machine learning algorithms enable secure transaction processing, ensuring consumer data privacy and safeguarding against fraud. In the competitive courier industry, assurance differentiates service providers by addressing consumers' emotional and functional concerns. Features like well-trained delivery personnel, courteous communication, and advanced technological support for the secure handling of goods reflect high levels of assurance. Studies highlight that trust in technology-enhanced services correlates strongly with customer satisfaction, particularly in fast-paced last-mile delivery scenarios (Shatat & Shatat, 2024). Thus, it is proposed that:

H3: Assurance has a positive impact on customer satisfaction.

Responsiveness is the willingness to help customers and provide prompt service. In the context of last-mile delivery, this includes quickly addressing delivery issues, responding to customer inquiries, and handling complaints efficiently. High responsiveness demonstrates to customers that the company values their time and

concerns, leading to increased satisfaction (Asdecker, 2021). Responsiveness in last-mile delivery significantly impacts customer satisfaction by addressing delivery issues promptly, responding swiftly to customer inquiries, and handling complaints efficiently. This quick and effective communication demonstrates to customers that the company values their time and concerns, which leads to increased satisfaction. Studies show that high responsiveness in last-mile delivery services enhances customer experience and fosters customer loyalty (Lai et al., 2022; Rajendran & Wahab, 2022).

For example, efficient problem resolution and real-time updates are crucial for maintaining trust and ensuring customers feel valued. This responsiveness is particularly critical in the e-commerce sector, where timely and accurate delivery is a key competitive differentiator. By consistently meeting customer expectations through responsive service, companies can build stronger customer relationships and achieve higher satisfaction rates (Parasuraman et al., 1991b; Rane et al., 2023). This focus on responsiveness enhances immediate satisfaction, repeat purchases, and long-term loyalty, making it a vital component of successful last-mile delivery strategies. In the context of last-mile delivery, responsiveness reflects a company's capability to adapt to customer preferences, provide real-time updates, and quickly resolve issues. Modern consumer expectations, shaped by the rapid growth of e-commerce, demand exceptional responsiveness, including flexible delivery schedules, proactive communication, and swift resolution of complaints (Jing et al., 2023). Responsiveness also encompasses proactive measures, such as offering same-day or one-hour delivery options, which align with modern consumer expectations for speed and flexibility. Studies highlight that consumers associate responsiveness with a higher degree of customer care, fostering trust and loyalty. Companies that leverage advanced technologies to enhance responsiveness can achieve a competitive edge by exceeding consumer expectations in the fast-evolving logistics landscape (Setiono & Hidayat, 2022). Thus, it is hypothesised that:

H4: Responsiveness has a positive impact on customer satisfaction.

Tangible refers to the physical aspects of the service, such as the appearance of delivery personnel and vehicles and the condition of the packaging. These physical elements create first impressions and can significantly influence customers' perceptions of service quality. Maintaining a professional appearance in the workplace is crucial for enhancing customer satisfaction. A well-maintained and professional appearance signals reliability and attention to detail, which are essential traits for fostering customer trust and confidence. Research highlights that a professional appearance impacts customer perceptions of trustworthiness, legitimacy, and professionalism. This impression can significantly influence customer decisions and satisfaction with the service received

(Pakurár et al., 2019; Zygiaris et al., 2022). Tangibility in last-mile delivery services, which includes the physical aspects such as the appearance of delivery personnel and vehicles and the condition of packaging, plays a crucial role in influencing customer satisfaction (Sobaih & Alsaif, 2023).

These tangible elements are often the first point of contact between the delivery service and the customer, forming the initial impressions that significantly affect perceptions of service quality (An et al., 2023; Zia, 2020). The professional and well-maintained appearance of delivery personnel and vehicles signals reliability and attention to detail, which fosters customer trust and satisfaction. The condition of packaging is also vital, as it directly impacts the perceived value and care taken in handling deliveries. Ensuring packages arrive in excellent condition enhances the overall delivery experience and customer satisfaction. Research indicates that various dimensions of service quality, including tangibility, influence customer satisfaction and loyalty differently. For example, studies have shown that the physical condition of shipments is a critical determinant of customer satisfaction, which highlights the importance of maintaining high standards in all tangible aspects of delivery services (Muala, 2016).

This focus on tangible elements helps create a positive customer experience, which is essential for fostering repeat business and long-term loyalty. In the courier industry, tangibles play a crucial role in shaping the customer experience

and satisfaction by conveying reliability, professionalism, and attention to detail. Modern consumer expectations, driven by the growth of e-commerce, emphasise clean, branded vehicles, tamper-proof and eco-friendly packaging, and clear, professional interactions. The rise of technology has redefined tangibles in the last-mile delivery segment. High-quality mobile apps and web interfaces that offer seamless navigation, real-time tracking, and detailed order management have become key tangible components of the customer experience (Wu & Rojniruttikul, 2024). These digital tools enhance customer satisfaction by providing transparency and control, aligning with modern consumer preferences for convenience and immediacy. Innovations such as AI and drone deliveries further enhance tangibles by improving operational efficiency and customer perceptions of service quality. Research indicates that packaging innovations like reusable or biodegradable materials also play a significant role in meeting customer expectations and boosting satisfaction (Muthukalyani, 2023). Based on the preceding review of the literature, this study hypothesises that:

H5: Tangible has a positive impact on customer satisfaction.

METHODS

The study hypotheses were tested by utilising a quantitative research method in conjunction with an explanatory research design and a deductive methodology (Rashid

et al., 2021). A total of 245 questionnaires were gathered from the respondents using the convenient sampling technique. In the context of customer satisfaction in the courier industry, convenience sampling is appropriate because it enables the inclusion of a diverse set of participants who have interacted with courier services, providing immediate insights into consumer experiences. This method is also valuable in industries where customers are geographically dispersed, and accessing a randomised sample may be challenging or cost-prohibitive (Ahmed, 2024; Taherdoost, 2016). Furthermore, when the primary goal is to identify trends, patterns, or preliminary findings rather than generalising to the entire population, convenience sampling serves as an effective and resource-efficient approach (Farrokhi & Mahmoudi-Hamidabad, 2012; Gani et al., 2024).

The research instruments employed in this study, namely the questionnaire with a 5-point Likert scale (1= Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree), are designed to assess various dimensions of customer satisfaction in courier services, with a particular focus on service quality elements in the context of last-mile delivery. Each of these dimensions, such as **Assurance, Empathy, Responsiveness, Reliability, Tangible elements,** and **Customer Satisfaction on Parcel Service Safety (CSPSS), is evaluated based on customer perceptions and experiences.** The assurance section focuses on how secure and reliable the customer perceives the courier service to be in handling parcels. The Likert scale items measure the courier's ability to deliver parcels securely, provide accurate information, ensure parcel safety during delivery, and protect personal data. The empathy dimension measures how well courier employees understand and respond to the specific needs of the customer, particularly with regard to parcel safety. The items here focus on communication, preparedness, and willingness to go beyond basic service expectations. Responsiveness assesses how quickly and effectively the courier service can address customer issues, provide updates, and handle unexpected situations.

The Likert scale items assess timely notifications, handling delays, and addressing lost or damaged parcels. The reliability dimension measures the consistency, accuracy, and dependability of the courier service in meeting delivery commitments. Items in this section gauge the service's ability to meet delivery timelines, ensure the correct delivery of parcels, and handle reverse logistics or returned items. The tangible section addresses the physical aspects of the courier service, such as the condition of delivery vehicles, the professionalism of staff, and the use of updated technologies. Items are designed to evaluate how well the physical aspects of the service contribute to the overall customer experience. Finally, the CSPSS scale measures the customer's overall satisfaction with the safety of the parcel delivery process. This includes their experience with parcel integrity, timely delivery, and the absence of

damage or theft. Respondents were selected based on their experience and perception of using courier services. Those who have used such services are chosen as they can provide insights into their experiences.

Further, the Partial Least Squares Structural Equation Modelling (PLS-SEM) method was used to test the research model. The use of PLS-SEM is justified when the primary goal of the study is predictive accuracy and the exploration of complex relationships between variables. Compared to Covariance-Based SEM (CB-SEM), PLS-SEM offers several advantages, including its suitability for small sample sizes, its ability to handle non-normal data distributions, and its focus on maximising explained variance rather than model fit indices (Hair et al., 2016). This makes PLS-SEM particularly appropriate for studies in emerging research areas or those involving complex models with numerous constructs and indicators. Additionally, PLS-SEM is well-suited for scenarios where the research seeks to identify key predictors and explain variance in dependent variables, as opposed to strictly confirming theoretical models (Sarstedt et al., 2014). Its flexibility and predictive orientation have led to widespread adoption in fields such as marketing, management, and information systems (Ringle et al., 2020). We employed a two-step strategy for PLS-SEM, evaluating both the measurement model and the structural model in accordance with the guidelines set forth by Anderson and Gerbing (1988). Smart PLS v. 3.2.7 software has been used to estimate the theoretical model (Ringle et al., 2015). Following the recommendations by Hair et al. (2017), we performed an evaluation of multivariate skewness and kurtosis. The findings revealed that the collected data deviated from a multivariate normal distribution, as demonstrated by significant values for Mardia's multivariate skewness ($\beta = 5.115$, $p < 0.01$) and Mardia's multivariate kurtosis ($\beta = 62.566$, $p < 0.01$).

RESULTS AND DISCUSSIONS

Demographic Analysis

The description of the demographic profile for respondents is demonstrated in Table 1.

The analysis of respondents' demographics reveals a diverse cross-section of respondents across various categories. The gender distribution within the sample population indicates a slightly higher representation of females (59.2%) compared to males (40.8%). Age-wise, most respondents fall within the 18–29 years bracket, constituting 43.7% of the sample, followed by descending percentages in subsequent age groups. It shows that younger customers are frequent users of parcel services for buying transactions. Therefore, the courier provider should enhance its services, as younger customers often prioritise technological convenience and speed in service delivery. They are more likely to value features like real-time tracking, mobile app interfaces, and same-day delivery options. On the other hand, older customers may prioritise reliability, personal interaction, and clear communication over speed or digital sophistication. For younger users, delays in service or poor app interfaces may lead to dissatisfaction.

Table 1
Profile of the respondents

Items	Percentage (%)	Frequency
Gender		
Male	40.8	100
Female	59.2	145
Age		
18–29 years	43.7	107
30–39 years	24.1	59
40–49 years	20	49
50–60 years	7.3	18
61 years above	4.9	12
Race		
Malay	71.4	175
Chinese	14.7	36
Indian	11.8	29
Others	2	5
Education level		
SPM/MCE/O-Level	3.7	9
Diploma/STPM/STP/HSC/A-Level	17.1	42
Bachelor's degree	50.6	124
Master's degree	22.4	55
Doctoral Degree	6.1	15
Occupation		
Student	29.4	72
Government Sector	20	49
Private Sector	27.8	68
Self Employed	13.9	34
Unemployed	0.8	2
Retiree	4.9	12
Housewife	3.3	8
Income		
Less RM2500	44.5	109
RM 2501–RM 3170	9	22
RM 3171–RM 3970	6.9	17
RM 3971–RM 4850	3.7	9
RM 4851–RM 5880	8.6	21
RM 5881–RM 7100	6.5	16
RM 7101–RM 8700	5.7	14
RM 8701–RM 10,970	8.2	20
RM 10971–RM 15,040	4.1	10
More than RM 15,040	2.9	7

At the same time, older consumers might be more forgiving of technological glitches but expect high levels of courtesy and clarity in communication. The racial composition highlights a predominant representation of individuals from the Malay ethnic group (71.4%), with notable percentages from Chinese (14.7%), Indian (11.8%), and "Others" (2%) ethnicities.

In terms of educational attainment, a significant proportion holds bachelor's degrees (50.6%), followed by master's degrees (22.4%), while smaller percentages possess Diploma/STPM/A-Level qualifications (17.1%), Doctoral degrees (6.1%), or SPM/MCE/O-Level certificates (3.7%). Professionally, this research covers a diverse range. Of the respondents, 29.4% were students, followed by people from the private sector (27.8%) and people from the public sector (20%). There is also a proportion of self-employed people (13.9%), pensioners (4.9%), housewives (3.3%), and a minimal proportion of unemployed people (0.8%). The income distribution shows a diverse range, with the majority earning less than RM2,500 (44.5%) and the proportion varying within different income brackets up to RM15,040 and above. Based on the respondents' income distribution, many with lower incomes participated in this study. It means that lower-income customers may prioritise affordability and basic reliability over luxury features to measure customer satisfaction with parcel delivery services. For them, perceived value is linked to cost-effectiveness and consistent performance at reasonable prices. It can be concluded that demographic factors like age and income significantly influence how customers perceive and evaluate service quality. Understanding and addressing these nuances enables businesses to tailor their services effectively and enhance satisfaction across a diverse customer base, particularly in the courier industry.

Collectively, these results represent a diverse and multifaceted participant pool and provide comprehensive insight into the demographics of our survey respondents. The questionnaire was collected from several types of residential areas. The report for the residential properties is reported in Table 2.

The assessment of residential types conducted in the study shows a diverse distribution among the participants. According to the data, most people live in terraced houses (25.3%), followed closely by those living in bungalows (19.0%). Regarding institutional residential, a significant proportion of respondents (20.4%) lived in public universities, suggesting a significant presence of students and people associated with these institutions. However, minimal proportions were observed at private universities (0.8%), graduate universities (2%), technical colleges (4.9%), and community colleges (1.2%), which indicates relatively low participation in the country.

A significant proportion of those surveyed live in various apartments or housing complexes. This includes residents of apartments/apartments/condos with doorstep delivery (12.2%), serviced apartments (1.2%), studio apartments (1.2%), and SOHO residents. (Small offices/

Table 2
Type of residential

Type of residential	Percentage (%)	Frequency
Public University	20.4	50
Private University	0.8	2
College University	2	5
Polytechnic	4.9	12
College Community	1.2	3
Flat/Apartment/Condominium with doorstep delivery	12.2	30
Service apartment	1.2	7
Studio apartment	1.2	3
SOHO (Small office home office)	1.2	3
Terrace house	25.3	62
Semi-detached house	3.3	8
Cluster home	2.0	5
Townhouse	2.2	5
Villa	1.2	3
Bungalow	19.0	46
Others	0.2	1

home offices) (1.2%), semi-detached houses (3.3%), cluster houses (2.0%), townhouses (2.2%), villas (1.2%). Additionally, a small proportion of the population lives in other housing types classified as 'other' (0.2%).

The distribution of residential types within the study population shows a wide range of housing preferences and housing types. The prevalence of single-family houses, such as terraced houses and bungalows, indicates that a significant proportion of people live in traditional housing structures. On the contrary, various types of residences, such as apartments, housing complexes, and institutional housing complexes, show the diversity of living styles and ways of living. This diverse housing representation in survey data can potentially impact various aspects, such as accessibility to amenities, community dynamics, and lifestyle preferences.

Measurement Model

Convergent validity is the first test, and it determines if an item measures the latent variable that it is claimed to measure (Urbach & Ahlemann, 2010). Hair et al. (2017) suggested that to ensure that convergent validity is achieved in the model, the loading and average variance explain (AVE) must exceed 0.5, and the composite reliability (CR) must reach 0.7. With loading, AVE, and CR values adequate for the suggested ranges (0.714 to 0.856 for loading, 0.631 to 0.861 for AVE, and 0.759 to 0.959 for CR), the study verified that convergent validity was sufficient. Therefore, the measurement model's evidence of convergent validity may be confirmed. The study's measuring model's results are illustrated in Table 3.

Table 3
Measurement model

Construct	Loading	CR	AVE
Assurance			
Courier service is helpful in guiding customers to ensure the parcel is delivered safely	0.782	0.959	0.698
The parcel is delivered securely	0.878		
Provide accurate parcel information	0.825		
Integrity of courier employees when handling postal articles	0.799		
Courier employees are familiar with the locality	0.796		
Able to ensure the protection of the personal information of the sender/ recipient when the parcel is delivered	0.787		
Able to ensure that parcels are placed in a safe place for contactless delivery	0.862		
Courier service provider assures declaration of liability should the parcel be lost or damaged	0.866		
Courier service providers should oblige the existence of safety guidelines in the delivery of parcel	0.889		
Courier service providers should accommodate parcel packaging guidelines	0.863		
Empathy			
Understand the customer's need to ensure that the parcel is delivered in a secure manner	0.795	0.929	0.725
Always be prepared with the necessary information if the customer wishes to know or faces issues related to the safety of the parcel	0.839		
The courteous communication from courier employees with respect to the safety of parcel delivery.	0.883		
The willingness to consider service delivery beyond scope to ensure the parcel is safely delivered	0.886		
Courier service providers should take note of customer complaints regarding the safety of parcel delivery	0.851		
Responsiveness			
Able to provide timely notification to customers on delivery updates	0.761	0.950	0.730
Be ready to help if the customer faces any problem	0.866		
Capable of offering timely remedy for any issues that occurred during delivery	0.884		
Promptly respond to customer requests	0.856		
Knowledgeable and skilled in handling parcel delivery	0.773		
Ability to handle lost and damaged parcels	0.869		
Ability to communicate during parcel delivery delays.	0.864		
Ability to provide incident reporting	0.900		
Reliability			
Consistency in meeting timeline	0.778	0.953	0.719
Accuracy in retrieving customer delivery information	0.809		
Controlled damage in service delivery	0.893		

Table 3 *(continue)*

Construct	Loading	CR	AVE
Ability to notify accurate customer delivery information	0.890		
Willingness to handle the reversed parcel	0.878		
Able to ensure the parcel is delivered in good condition	0.876		
Courier service providers should consistently meet Service Level Agreements (SLA) when delivering the parcel.	0.852		
Tangible			
Facilities and transportation tools are in order	0.756	0.923	0.631
Staff are properly presented in uniform and dress code	0.778		
Adequate secure packaging services offered to customers	0.832		
Adequate parcel handling safety	0.798		
Updated courier technology (i.e., QR code)	0.764		
The courier service provider provides adequate tracking and monitoring system	0.844		
Drop off security (i.e. proof of delivery)	0.785		
Customer Satisfaction on Parcel Service Safety (CSPSS)			
My parcel is delivered correctly to my address	0.726	0.759	0.861
My parcels are usually damage-free when I receive them from the courier service provider	0.793		
I have no experience in receiving delayed parcel	0.714		
I have no experience in losing parcel	0.763		
I have no experience in receiving a tempered parcel	0.819		

In order to verify that each construct is distinct and captures phenomena that other constructs in the model have not mapped, the second test is a discriminant validity test (Hair et al., 2017). Henseler et al. (2015) proposed the use of the HTMT ratio at this stage. An HTMT value higher than 0.90 indicates there is a severe issue of discriminant validity (Henseler et al., 2015). Table 4 shows that discriminant validity is established because all the HTMT values were lower than the most conservative value set out by Henseler et al. (2015).

Table 4
Discriminant validity (HTMT)

	Assurance	Empathy	Parcel Service Safety	Reliable	Responsive	Tangible
Assurance						
Empathy	0.862					
Parcel Service Safety	0.156	0.137				
Reliability	0.791	0.823	0.247			
Responsiveness	0.778	0.701	0.215	0.721		
Tangible	0.794	0.775	0.238	0.724	0.761	

Before moving on to the structural model, the lateral collinearity test (VIF) was conducted once a measurement model was verified to make sure there was no collinearity problem in the model. Diamantopoulos and Siguaw (2006) noted that there may be a collinearity problem if the VIF value is greater than 3.3. Table 5 shows that all VIF values are lower than 3.3, confirming that lateral multicollinearity is not a concern for this study.

Table 5
Multicollinearity

Construct	VIF
Assurance	3.244
Empathy	3.316
Reliability	2.839
Responsiveness	2.573
Tangible	2.621

Structural Model

Hair et al. (2017) suggested looking at the standard beta, t-values using a bootstrapping process using a resample with more respondents, confidence intervals, Q^2, which looks at predictive relevance, and f^2, which looks at effect sizes, to evaluate the structural model. The findings indicate that two hypotheses (H2 and H3) were supported, whereas three hypotheses (H1, H4, and H5) were not supported. Reliable (β = -0.301, t = 2.127: LL = -0.514, UL = 0.006, $p < 0.05$) and assurance (β = 0.106, t = 0.615: LL = -0.309, UL 0.393, $p < 0.05$). Regarding empathy (β = 0.170, t = 1.072: LL = -0.161, UL = 0.512, $p > 0.05$), responsive (β = -0.079, t = 0.599: LL = -0.331, UL = 0.185, $p > 0.05$ and tangible (β = -0.149, t = 1.256: LL = -0.405, UL = 0.073, $p > 0.05$), they were also unsupported.

Based on the results shown in Table 6, the courier service's overall customer satisfaction is positively impacted by reliability and assurance taken together. Customer satisfaction is greatly increased by the service's reliability, which includes constant service quality and on-time deliveries. The speed of exchange has the biggest impact on customer satisfaction. In the context of courier services, the speed of exchange refers to the timeliness and swiftness with which parcels are picked up, transported, and delivered to

Table 6
Path coefficient assessment

Hypothesis	Relationship	Beta	SE	T value	P value	LL	UL	Decisions
H1	Empathy -> CSPSS	0.170	0.159	1.072	0.284	-0.161	0.512	Unsupported
H2	Reliability -> CSPSS	-0.301	0.141	2.127	0.034	-0.514	0.006	Supported
H3	Assurance -> PCSSS	0.106	0.172	0.615	0.039	-0.309	0.393	Supported
H4	Responsiveness -> CSPSS	-0.079	0.132	0.599	0.549	-0.331	0.185	Unsupported
H5	Tangible -> CSPSS	-0.149	0.119	1.256	0.210	-0.405	0.073	Unsupported

the intended recipients. In today's fast-paced world, customers expect rapid delivery services, especially with the rise of e-commerce platforms offering next-day or even same-day delivery options. Meeting these expectations is crucial for maintaining high levels of customer satisfaction. Providing customers with clear and accurate information fosters trust and has a good effect on their satisfaction. Positive customer experiences are mostly dependent on concrete factors like the state of the vehicles and facilities as well as the responsiveness to the demands and concerns of the customers.

In this context, reliability and assurance, that is, knowing and relating to the capability of the service provider, are highly favourable factors in boosting total satisfaction among customers. The findings show that reliability, which is typically thought of as the basis of customer satisfaction, can occasionally have an adverse impact. Customers' satisfaction with the courier service appears to be negatively impacted by elements like delays and uneven service quality. This shows that reliability in the context of safety needs to be closely examined, with a focus on ongoing improvement to achieve customer expectations. Giving customers clear and precise information has been shown to have a beneficial effect on their level of satisfaction overall. When they obtain trustworthy information, customers appreciate the confidence and faith courier service providers engender in them.

On the other side, our analysis shows that empathy, responsiveness and tangibility might occasionally have a negative effect on customer satisfaction. Several critical elements influence the complex character of customer satisfaction in the courier service sector. When forced or untrue, empathy, which is frequently seen as a crucial component of customer service, can occasionally have a detrimental effect on total customer satisfaction. Inauthentic empathy may be interpreted by customers as dishonest, which would make them feel even less satisfied. Therefore, the courier service should stress how important it is to act with true empathy while interacting with customers. The findings also imply that although concrete elements like the state of vehicles and facilities and responsiveness are important, they occasionally fail to live up to customer expectations. Customers may become confused and dissatisfied due to inconsistent tangible aspects (e.g., some branches are well-maintained while others are not). Consequently, customers may become dissatisfied with tangibles if they do not match the brand image or their expectations. In terms of responsiveness, courier service providers may answer quickly, but poor responses might irritate customers. Being prompt does not fulfil the expectations of the customer if the problem is not satisfactorily resolved. This suggests that to guarantee that these factors continuously contribute favourably to satisfaction, more focus must be placed on optimising them. There is a complex relationship between these variables and general customer satisfaction in the courier service safety sector.

Table 7

Coefficient of determination (R^2), effect size (f^2) and predictive relevance (Q^2)

Construct	R^2	Q^2	f^2	Decision
Parcel Service Safety	0.084	0.017		
Empathy			0.010	Small
Reliability			0.035	Small
Assurance			0.003	Small
Responsiveness			0.003	Small
Tangible			0.009	Small

Table 7 presents the report of the coefficient of determination (R^2), the effect size (f^2), and the predictive relevance (Q^2) of exogenous variables on the endogenous variable. The R^2 value is 0.084, suggesting that empathy, reliability, assurance, responsiveness, and tangibility made up 8.4% of the variance in the intention to adopt courier service safety. The Q^2 for parcel service safety is 0.017, which is higher than 0 (Hair et al., 2017), indicating that all exogenous variables have a predictive ability on the intention to adopt postal service safety. The effect size analysis values are assessed following a pattern of 0.35, indicating a substantial 0.15 medium and 0.02 small, consistent with prior studies (Cohen, 1988; Hair et al., 2016). All the endogenous variables have a small effect on parcel service safety.

CONCLUSION

The results of this study underscore the critical importance of **reliability and assurance** in shaping overall customer satisfaction within the courier service industry. Reliability, defined by consistent service quality and the punctual delivery of parcels, is an essential element in meeting the evolving expectations of customers, particularly within the context of the rapidly growing e-commerce sector. As customer demands for fast and dependable services continue to rise, courier service providers must place significant emphasis on ensuring timely delivery, accurate information, and effective communication with consumers. Notably, the speed of exchange, which pertains to the swiftness and efficiency with which parcels are collected, processed, and delivered to recipients, emerged as one of the most influential factors in enhancing customer satisfaction. In today's competitive environment, where next-day or even same-day delivery is becoming the norm, providing reliable and quick delivery services is not only an expectation but also a key driver of positive customer experiences. Moreover, the ability of service providers to deliver accurate and transparent information to customers fosters a sense of trust and confidence, which further contributes to a more satisfying overall experience.

Equally important are the tangible elements of service quality, which encompass the physical infrastructure, such as the state of delivery vehicles and facilities, as well as the responsiveness

of staff in addressing customer concerns. The findings highlight that these tangible aspects, though vital, must be consistent and align with customer expectations to positively influence customer perceptions. For example, while well-maintained vehicles and up-to-date technology systems can significantly enhance the customer experience, inconsistency in these tangible elements, such as poor maintenance in some branches or inadequate tracking systems, can lead to customer dissatisfaction. This suggests that service providers must ensure uniformity across all service touchpoints to maintain a strong brand image and positive customer perceptions.

However, this study also points to more nuanced and complex relationships between other key factors, particularly empathy, responsiveness and tangible elements, which were found to occasionally exert a negative impact on customer satisfaction. While generally considered a crucial component of customer service, empathy can have detrimental effects when perceived as insincere or forced. When customers perceive empathy as a mere formality rather than a genuine effort to address their concerns, it can undermine their trust and reduce overall satisfaction. This finding suggests that authentic empathy, where service providers demonstrate a true understanding of customer needs and concerns, should be emphasised as a key service quality attribute. Similarly, responsiveness, though vital for customer satisfaction, must go beyond merely offering quick replies. The study found that customers

are dissatisfied when their issues are not adequately resolved, even if responses are timely. This emphasises the importance of not just quick response but also effective solutions. Customers value the quality of the response in addition to its speed, which means that courier services must equip their staff with the tools, knowledge, and authority to resolve issues comprehensively.

The findings regarding tangible elements further indicate that the condition of the physical infrastructure, including vehicles, facilities, and technology, plays a pivotal role in shaping customer satisfaction. However, inconsistencies in maintaining these elements across different locations or services can lead to customer confusion and dissatisfaction. The study suggests that courier service providers should ensure that all physical aspects of service delivery meet or exceed customer expectations to uphold service quality and brand integrity.

In conclusion, the study reveals a complex and multifaceted relationship between various service quality dimensions, such as reliability, assurance, empathy, responsiveness, and tangible elements and overall customer satisfaction in the courier industry. While factors like reliability and assurance are positively associated with satisfaction, other elements like empathy, responsiveness, and tangible aspects require careful attention to avoid potential negative impacts. The results emphasise the importance of continuously refining these factors to meet the dynamic needs of customers. Service providers should focus on authentic communication, consistent

quality across touchpoints, and effective problem-solving strategies to enhance customer satisfaction and build long-term loyalty. By addressing these areas, courier service providers can create more satisfying customer experiences, thereby fostering stronger customer relationships and sustaining a competitive advantage in the rapidly evolving courier industry.

Managerial Implication

This study serves as a basis for the parcel service providers in terms of the managerial implications. This study provides insight into the methods that should be prioritised for parcel distribution by identifying the aspects that influence customer satisfaction. This goal's integration of empathy, reliability, assurance, responsiveness, and tangibility is extremely relevant and provides a thorough framework for understanding the specifics of customer satisfaction in the context of the delivery of packages. The customer experience can be improved by looking at how these service quality factors connect with customer perceptions and expectations. First, empathy is a cornerstone of delivering exceptional customer satisfaction in the courier industry. Businesses must actively invest in understanding how customers perceive empathy throughout the delivery process to foster a truly customer-centric experience. This includes focusing on key aspects such as the level of personalisation provided and the attention to detail and care demonstrated, particularly in situations where customers are not available to receive their packages directly. By prioritising

these actions, businesses can transform the delivery process into more than just a transactional service—it becomes a relationship-building opportunity. This infusion of genuine care and personalisation reassures customers, builds trust, and strengthens loyalty. Ultimately, this approach ensures operational efficiency and creates a lasting positive impression, driving customer satisfaction to new heights in the highly competitive courier industry.

Second, reliability is a fundamental pillar of customer satisfaction in package delivery, particularly when customers are unavailable to receive their parcels. Businesses must thoroughly evaluate how reliability influences customers' perceptions of satisfaction and safety, identifying specific factors that contribute to a seamless experience. For instance, ensuring timely deliveries, safeguarding packages from damage or theft, and providing clear communication about delivery status can significantly enhance customer confidence. To address gaps in reliability, companies should leverage advanced tracking technologies, such as real-time GPS updates, to keep customers informed about the progress of their delivery. Automated alerts for potential delays and flexible delivery options, like rescheduling or redirecting to alternative locations, can further ensure that services align with customer expectations, even in their absence. Equally important is the implementation of efficient and customer-friendly parcel return services. Often overlooked, these services are critical to a positive post-

purchase experience. Businesses must provide clear and straightforward processes for customers to return damaged, incorrect, or unsatisfactory items in size or quality. Options like scheduled pick-ups, drop-off locations, or pre-paid return labels simplify the process and demonstrate a commitment to customer convenience. By embedding reliability into every step of the delivery and post-purchase process, companies can build trust, improve satisfaction, and position themselves as dependable partners in the competitive courier industry.

Third, assurance, defined as providing clear and accurate information about parcel safety measures, is crucial to building customer trust and satisfaction in the delivery process. Businesses must focus on understanding how the quality and transparency of safety information influence customer expectations and their willingness to pay a premium for added security. For example, clearly communicated safety protocols, such as secure packaging, tracking systems, and insurance options, can significantly increase customer confidence in the delivery process, making them more likely to choose premium services. Service providers should proactively communicate the security measures for each package, ensuring customers are fully informed at every delivery stage. This not only meets customer expectations but also reassures them about the safety of their goods. Clear information on parcel protection builds a sense of reliability and reduces anxiety, including details on how items are handled, stored, and insured.

Moreover, service providers must ensure they can respond swiftly and efficiently to customer inquiries, particularly regarding delivery status, pricing concerns, and insurance claims. This means setting up responsive customer support channels, such as live chat, dedicated helplines, or AI-powered assistants that can quickly address issues or provide updates. Implementing a streamlined process for handling claims and inquiries enhances the customer experience, demonstrating a service provider's commitment to resolving concerns and maintaining customer satisfaction. By focusing on providing transparent, accessible information about safety and responding promptly to customer queries, courier companies can improve customer loyalty and satisfaction while also creating opportunities for premium service offerings.

Fourth, this study emphasises the need for parcel service providers to prioritise enhancing response times and improving parcel returnability services as key factors in increasing customer satisfaction. Responsiveness is critical in addressing customer complaints and ensuring parcel safety, making it essential for businesses to focus on developing solutions that expedite responses to customer concerns. To achieve this, parcel service providers should implement strategies that enable faster response times, such as investing in automated customer service tools like chatbots or AI-powered assistants. These tools can provide immediate answers to common queries, while more complex issues can swiftly escalate to human agents.

Additionally, streamlining communication channels, such as offering real-time tracking, automated status updates, and easy-to-access customer support, ensures that customers are always informed about the progress of their deliveries, even in the event of delays. Moreover, when issues like delayed deliveries or safety concerns arise, it is crucial for service providers to act promptly. Even if a delay or problem occurs, the key is to provide customers with timely and accurate updates, as well as clear next steps. By being transparent and communicative, businesses can manage customer expectations and reduce frustration, which directly impacts satisfaction. In addition, parcel returnability services should be made as convenient and hassle-free as possible. Offering easy-to-navigate return processes, including clear instructions and multiple return options (such as drop-off locations or at-home pick-up services), would go a long way in enhancing customer satisfaction. Return services should be integrated into the customer experience seamlessly, ensuring that customers are not left with the burden of dealing with complicated or slow return procedures.

Finally, the external factors that influence delivery, such as the condition of delivery trucks and facilities, play a crucial role in shaping customers' perceptions of service safety and quality. These tangible elements, ranging from the cleanliness and maintenance of delivery vehicles to the security and organisation of distribution centres, directly impact how safe and reliable customers believe the services to be. To enhance customer satisfaction, parcel service providers must regularly evaluate and maintain the physical infrastructure required for safe and efficient delivery. An in-depth analysis of how these tangible aspects contribute to customer satisfaction is essential. By understanding the correlation between well-maintained vehicles, secure facilities, and customer perceptions, businesses can identify key areas for improvement. For example, implementing routine vehicle inspections, upgrading security measures at warehouses, and ensuring that trucks are equipped with real-time tracking devices can increase the perceived safety and professionalism of the delivery service. Therefore, this study aims to produce useful guidelines that any parcel service provider can use as a starting point to enhance their present and future services.

Limitation and Future Studies

This study acknowledges several key limitations that offer valuable opportunities for future research. First, the sample of 285 respondents from the Selangor and Kuala Lumpur regions does not fully capture the diversity of Malaysia's broader customer base in the courier service sector. Future studies could broaden the sample size and expand the geographic scope, including urban and rural areas across different states of Malaysia, to generate more robust and generalisable insights. This would allow a more comprehensive understanding of customer satisfaction and service quality factors across varying demographics and regional characteristics. Second, future

research could delve deeper into formulating and testing hypotheses on the relationships between key variables in different regions of Malaysia. This would help to uncover regional differences in customer expectations and service perceptions, which could further inform targeted strategies for courier service providers in specific locales.

Additionally, future studies could explore emerging trends in the last-mile delivery sector, such as the role of sustainable logistics practices and their influence on customer satisfaction. As environmental concerns continue to grow, examining how eco-friendly delivery methods (e.g., electric vehicles, carbon offsetting) impact consumer perceptions and loyalty could provide valuable insights. Similarly, the increasing automation of logistics, including the use of drones and autonomous vehicles for last-mile delivery, offers a promising area for research. Investigating how these technological advancements affect service quality, efficiency, and customer satisfaction could offer a forward-looking perspective. Expanding the scope of research beyond Malaysia to include international comparisons could also enrich the study. By analysing different geographical contexts, researchers could identify global customer expectations and service quality trends, providing a more nuanced understanding of the global courier service landscape. Integrating these innovative trends and expanding the geographical reach of future studies would enhance the depth and relevance of research in the evolving field of last-mile delivery.

REFERENCES

Ahmed, S. K. (2024). How to choose a sampling technique and determine sample size for research: A simplified guide for researchers. *Oral Oncology Reports*, *12*, Article 100662. https://doi.org/10.1016/j.oor.2024.100662

Al-Daradkah, H. Y. A. (2024). The impact of artificial intelligence on logistics support. *Library Progress International*, *44*(3), 11975-11985.

An, S., Lee, P., & Shin, C. H. (2023). Effects of servicescapes on interaction quality, service quality, and behavioral intention in a healthcare setting. *Healthcare*, *11*(18), Article 2498. https://doi.org/10.3390/healthcare11182498

Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, *103*(3), 411-423. https://doi.org/10.1037/0033-2909.103.3.411

Asdecker, B. (2021). Building the e-Commerce supply chain of the future: What influences consumer acceptance of alternative places of delivery on the last-mile. *Logistics*, *5*(4), Article 90. https://doi.org/10.3390/logistics5040090

Balinado, J. R., Prasetyo, Y. T., Young, M. N., Persada, S. F., Miraja, B. A., & Redi, A. A. N. P. (2021). The effect of service quality on customer satisfaction in an automotive after-sales service. *Journal of Open Innovation: Technology, Market, and Complexity*, *7*(2), Article 116.

Chen, W., Men, Y., Fuster, N., Osorio, C., & Juan, A. A. (2024). Artificial intelligence in logistics

optimization with sustainable criteria: A review. *Sustainability*, *16*(21), Article 9145. https://doi.org/10.3390/su16219145

Cohen, J. (1988). *Statistical Power Analysis for the Behavioural Sciences*. Lawrence Erlbaum Associates.

Crossley, C., Taylor, S. G., Liden, R. C., Wo, D., & Piccolo, R. F. (2023). Right from the start: The association between ethical leadership, trust primacy, and customer loyalty. *Journal of Business Ethics, 193*(409-426). https://doi.org/10.1007/s10551-023-05485-y

Dam, S. M., & Dam, T. C. (2021). Relationships between service quality, brand image, customer satisfaction, and customer loyalty. *Journal of Asian Finance Economics and Business*, *8*(3), 585-593.https://doi.org/10.13106/JAFEB.2021.VOL8.NO3.0585

Diamantopoulos, A., & Siguaw, J. A. (2006). Formative versus reflective indicators in organizational measure development. A comparison and empirical illustration. *British Journal of Management*, *17*(4), 263-282. https://doi.org/10.1111/j.1467-8551.2006.00500.x

Ejdys, J., & Gulc, A. (2020). Trust in courier services and its antecedents as a determinant of perceived service quality and future intention to use courier service. *Sustainability*, *12*(21), Article 9088. https://doi.org/10.3390/su12219088

Farrokhi, F., & Mahmoudi-Hamidabad, A. (2012). Rethinking convenience sampling: Defining quality criteria. *Theory and Practice in Language Studies*, *2*(4), 784-792. https://doi.org/10.4304/tpls.2.4.784-792

Fernandes, D. W., Moori, R. G., & Filho, V. A. V. (2018). Logistic service quality as a mediator between logistics capabilities and customer satisfaction. *Revista de Gestão*, *25*(4), 358-372. https://doi.org/10.1108/REGE-01-2018-0015

Gani, M. O., Bhuiya, N., Swarna, A. A., Alam, M. I., & Faruq, M. O. (2024). Determinants of adopting eCourier services: The moderating role of resistance to change. *Digital Transformation and Society*, *3*(2), 145-163. https://doi.org/10.1108/DTS-07-2023-0053

Hair, J. F., Hollingsworth, C. L., Randolph, A. B., & Chong, A. Y. L. (2017). An updated and expanded assessment of PLS-SEM in information systems research. *Industrial Management and Data Systems*, *117*(3), Article 3. https://doi.org/10.1108/IMDS-04-2016-0130

Hair, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2016). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Sage Publications.

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modelling. *Journal of the Academy of Marketing Science*, *43*(1), 115-135. https://doi.org/10.1007/s11747-014-0403-8

Hossain, M. S., & Rahman, M. F. (2022). Detection of potential customers' empathy behavior towards customers' reviews. *Journal of Retailing and Consumer Services*, *65*, Article 102881. https://doi.org/10.1016/j.jretconser.2021.102881

Islam, M. S., Suad, S. F. R., & Rahman, A. (2024). Leveraging AI to overcome key challenges in last-mile delivery: Enhancing customer experience and operational efficiency in e-commerce. *Supply Chain Insider*, *14*(1), 65-88. https://doi.org/10.5281/zenodo.13865897

Jing, L., Senathirajah, A. R., Haque, R., Devasia, S. N., Krishnasamy, H. N., Isa, M. B. M., & Ramasamy, G. (2023). The influence of e-service quality dimensions on customer satisfaction: Aimed at improving economic growth in China's online apparel e-marketplace. *International Journal of Operations and Quantitative Management*, *29*(3), 83-103.

Karim, M. M. (2020). SERVQUAL model for measuring customer satisfaction: An analysis of

quantitative data. *Noble International Journal of Business and Management Research*, *4*(12), 117-125.

Klein, P., & Popp, B. (2022). Last-mile delivery methods in e-Commerce: Does perceived sustainability matter for consumer acceptance and usage? *Sustainability*, *14*(24), Article 16437. https://doi.org/10.3390/su142416437

Lai, P. L., Jang, H., Fang, M., & Peng, K. (2022). Determinants of customer satisfaction with parcel locker services in last-mile logistics. *The Asian Journal of Shipping and Logistics*, *38*(1), 25-30. https://doi.org/10.1016/j.ajsl.2021.11.002

Marcysiak, A. (2021). Customer service quality management on the courier services market. *Entrepreneurship and Sustainability Issues, 9*(1), 190-203. https://doi.org/10.9770/jesi.2021.9.1(11)

Muala, A. A. (2016). The effect of service quality dimensions on customers' loyalty through customer satisfaction in Jordanian Islamic Bank. *International Journal of Marketing Studies*, *8*(6), 141-146. https://doi.org/10.5539/ijms.v8n6p141

Muthukalyani, A. R. (2023). Optimizing last-mile delivery in retail through AI-Powered routing and scheduling. *International Journal of Computer Engineering and Technology*, *14*(2), 194-204.

Nguyen, D. T., Pham, V. T., Tran, D. M., & Pham, D. B. T. (2020). Impact of service quality, customer satisfaction and switching costs on customer loyalty. *Journal of Asian Finance Economics and Business*, *7*(8), 395-405. https://doi.org/10.13106/JAFEB.2020.VOL7.NO8.395

Olsson, J., Hellstrom, D., & Vakulenko, Y. (2023). Customer experience dimensions in last-mile delivery: An empirical study on unattended home delivery. *International Journal of Physical Distribution & Logistics Management*, *53*(2), 184-205. https://doi.org/10.1108/IJPDLM-12-2021-0517

Owusu-Kyei, M., Kong, Y., Owusu Akomeah, M., & Owusu Afriyie, S. (2023). Assessing the influence of total quality management on customer satisfaction in the Telecom industry: A TQM–SERVQUAL perspective. *Businesses*, *3*(2), 251-271. https://doi.org/10.3390/businesses3020017

Pakurár, M., Haddad, H., Nagy, J., Popp, J., & Olah, J. (2019). The service quality dimensions that affect customer satisfaction in the Jordanian banking sector. *Sustainability*, *11*(4), Article 1113. https://doi.org/10.3390/su11041113

Parasuraman, A., Berry, L. L., & Zeithaml, V. A. (1991a). Refinement and reassessment of the SERVQUAL scale. *Journal of Retailing*, *67*(4), 420-450.

Parasuraman, A., Berry, L. L., & Zeithaml, V. A. (1991b). Undestanding customer expectation of service. *Sloan Management Review*, *32*(39-48).

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985). A conceptual model of service quality and its implications for future research. *Journal of Marketing*, *49*(4), 271-284. https://doi.org/10.1177/0309132512441318

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. *Journal of Retailing*, *64*(1), 12-40.

Park, S.-J., & Yi, Y. (2021). Assessing recommendation on a combination analysis of SERVPERF (or SERVQUAL) and IPA. *Total Quality Management & Business Excellence*, *33*(15-16), 1777-1798. https://doi.org/10.1080/14783363.2021.2001327

PwC. (2019). *Five forces transforming transport & logistics: PwC CEE Transport & Logistics Trend Book 2019*. https://www.pwc.com/m1/en/industries/documents/transport-logistics-trendbook-2019-en.pdf

Rajendran, S. D., & Wahab, S. N. (2022). Investigating last-mile delivery options on

online shoppers experience and repurchase intention *International Journal of Electronic Marketing and Retailing*, *13*(2), 224-241. https://doi.org/10.1504/IJEMR.2022.121826

Rane, N. L., Achari, A., & Choudhary, P. (2023). Enhancing customer loyalty through quality of service: Effective strategies to improve customer satisfaction, experience, relationship, and engagement. *International Research Journal of Modernization in Engineering Technology and Science*, *5*(5), 427-452. https://doi.org/10.56726/IRJMETS38104

Rane, N. L., Choudhary, S. P., & Rane, J. (2024). Acceptance of artificial intelligence: Key factors, challenges, and implementation strategies. *Journal of Applied Artificial Intelligence*, *5*(2), 50-70. https://doi.org/10.48185/jaai.v5i2.1017

Rashid, A., Rasheed, R., Amirah, N. A., Yusof, Y., Khan, S., & Agha, A. A. (2021). A quantitative perspective of systematic research: Easy and step-by-step initial guidelines. *Turkish Online Journal of Qualitative Inquiry*, *12*(9), 2874-2883.

Ringle, C. M., Sarstedt, M., Mitchell, R., & Gudergan, S. P. (2020). Partial least squares structural equation modeling in HRM research. *The International Journal of Human Resource Management*, *31*(12), 1617-1643. https://doi.org/10.1080/09585192.2017.1416655

Ringle, C. M., Wende, S., & Becker, J.-M. (2015). *SmartPLS 3*. http://www.smartpls.com

Sarstedt, M., Ringle, C. M., Smith, D., & Reams, R. (2014). Partial least squares structural equation modeling (PLS-SEM): A useful tool for family business researchers. *Journal of Family Business Strategy*, *5*(1), 105-115. https://doi.org/10.1016/j.jfbs.2014.01.002

Setiono, B. A., & Hidayat, S. (2022). Influence of service quality with the dimensions of reliability, responsiveness, assurance, empathy and tangibles on customer satisfaction. *International Journal of Economics, Business*

and Management Research, *6*(9), 330-341. https://doi.org/10.51505/ijebmr.2022.6924

Shatat, A. S., & Shatat, A. S. (2024). The dynamic support of artificial intelligence techniques in managing logistics activities. *Human Systems Management*. Advanced online publication. https://doi.org/10.1177/01672533241291421

Siali, F., Wen, A. W. S., & Hajazi, M. U. A. (2018). Booming of online shopping in Malaysia: Do customers satisfy with parcel delivery service? *International Journal of Academic Research in Business and Social Sciences*, *8*(12), 415-436. https://doi.org/10.6007/IJARBSS/v8-i12/5042

Sobaih, A. E. E., & Alsaif, A. (2023). Effects of parcel delivery service on customer satisfaction in the Saudi Arabian logistics industry: Does the national culture make a difference? *Logistics*, *7*(4), Article 94. https://doi.org/10.3390/logistics7040094

Sodiya, E. O., Umoga, U. J., Amoo, O. O., & Atadoga, A. (2024). AI-driven warehouse automation: A comprehensive review of systems *GSC Advanced Research and Reviews*, *18*(2), 272-282. https://doi.org/10.30574/gscarr.2024.18.2.0063

Solanki, A., & Jadiga, S. (2024). AI applications for improving transportation and logistics operations. *International Journal of Intelligent Systems and Applications in Engineering*, *12*(3), 2607-2617.

Sun, S., & Pan, Y. (2023). Effects of service quality and service convenience on customer satisfaction and loyalty in self-service fitness centers: Differences between staffed and unstaffed services. *Sustainability*, *15*(19), Article 14099. https://doi.org/10.3390/su151914099

Taherdoost, H. (2016). *Sampling methods in research methodology; how to choose a sampling technique for research*. SSRN. https://doi.org/10.2139/ssrn.3205035

Urbach, N., & Ahlemann, F. (2010). Structural equation modeling in information systems

research using partial least squares. *Journal of Information Technology Theory and Application 11*(2), 5-40.

Uzir, M. U. H., Halbusi, A., Thurasamy, R., Hock, R. L. T., Aljaberi, M. A., Hasan, N., & Hamid, M. (2021). The effects of service quality, perceived value and trust in home delivery service personnel on customer satisfaction: Evidence from a developing country. *Journal of Retailing and Consumer Services*, *63*, Article 102721. https://doi.org/10.1016/j.jretconser.2021.102721

Vrhovac, V., Dakic, D., Milisavljevic, S., Celic, D., Stefanovic, D., & Jankovic, M. (2024). The factors influencing user satisfaction in last-mile delivery: The structural equation modeling approach. *Mathematics*, *12*(12), Article 1857. https://doi.org/10.3390/math12121857

Wu, Z., & Rojniruttikul, N. (2024). Factors influencing customer retention in the parcel delivery industry. In S. Kot, B. Khalid, & Haque, A.u. (Eds.), *Corporate practices: policies, methodologies, and insights in organizational management. EEEU 2023.* (Springer Proceedings in Business and Economics, pp. 789-805). Springer. https://doi.org/10.1007/978-981-97-0996-0_48

Yang, Q., Wang, Z. S., Feng, K., & Tang, Q. Y. (2024). Investigating the crucial role of logistics service quality in customer satisfaction for fresh e-commerce: A mutually validating method based on SERVQUAL and service encounter theory. *Journal of Retailing and Consumer Services*, *81*, Article 103940. https://doi.org/10.1016/j.jretconser.2024.103940

Zhang, R., Jun, M., & Palacios, S. (2023). M-shopping service quality dimensions and their effects on customer trust and loyalty: An empirical study. *International Journal of Quality & Reliability Management*, *40*(1), 169-191. https://doi.org/10.1108/IJQRM-11-2020-0374

Zia, A. (2020). Discovering the linear relationship of service quality, satisfaction, attitude and loyalty for banks in Albaha, Saudi Arabia. *PSU Research Review*, *6*(2), 90-104. https://doi.org/10.1108/PRR-07-2020-0023

Zygiaris, S., Hameed, Z., Alsubaie, M. A., & Rehman, S. U. (2022). Service quality and customer satisfaction in the post pandemic world: A study of Saudi Auto care industry. *Frontiers in Psychology*, *13*, Article 842141. https://doi.org/10.3389/fpsyg.2022.842141

Do Village Funds Promote Rural Development and Alleviate Poverty in Indonesia? Implications for Village Funds Policies

Ellena Dio Paska[1], Mulyanto[1], Sarjiyanto[1], Radin Badaruddin Radin Firdaus[2]* and Mahinda Senevi Gunaratne[2]

[1]*Department of Economic Development, Faculty of Economic and Business, Universitas Sebelas Maret, 57126 Surakarta, Indonesia*
[2]*School of Social Sciences, Universiti Sains Malaysia, USM, Pulau Pinang, 11800, Malaysia*

ABSTRACT

The rural-urban poverty gap in Indonesia remains a significant concern. The government implemented village funds as part of fiscal decentralisation, but their impact on rural development and poverty reduction has shown mixed results. Additionally, no study has yet examined the effect of external shocks on the funds. This study integrates the Village Development Index and village real income as indicators of rural development, offering a comprehensive analysis of the impacts of village funds before and during a global crisis. By utilising panel data and analysis from 435 regencies/cities to analyse the effect of village funds from 2018 to 2022, the study findings reveal that, prior to the pandemic, village funds significantly enhanced rural development, especially in non-Java regions. However, during the pandemic, the funds could not alleviate poverty, highlighting the importance of implementing adaptive measures that prioritise crisis response while sustaining rural development efforts. The results provide critical insights for policymakers to refine fiscal decentralisation strategies and ensure resilient rural development.

Keywords: Indonesia, policy, poverty, rural development, village funds

INTRODUCTION

As the fourth most populous country in the world, Indonesia is expected to actively support and contribute to the Sustainable Development Goals (SDGs) agenda, with the primary objective of achieving 'no poverty' by 2030 (Nugroho et al., 2021). However, alleviating poverty in Indonesia presents its own challenges, as the disparity

in development between rural and urban areas has resulted in a higher number of poor people living in villages compared to cities (Muhtar et al., 2023). According to the Badan Pusat Statistik (BPS-Statistics Indonesia, 2024), the average poverty rate in urban regions was 7.1 per cent in March 2024, compared to 11.8 per cent in rural areas. This significant inequality necessitates focused government efforts on rural development to reduce the poverty rate.

The development of rural areas is essential for achieving the SDGs, especially in poverty eradication (Gunaratne et al., 2023; Hu et al., 2022; Sarjiyanto et al., 2023). Prioritising a development approach centred on rural areas is highly strategic, as it is expected to produce positive and far-reaching effects. Such an approach actively accelerates poverty alleviation initiatives and reduces inequality in rural areas (Handoyo et al., 2021; Santoso et al., 2019).

Implementing a fiscal decentralisation program is one of the government's efforts to accelerate rural development and alleviate poverty (Subiyantoro, 2010). Fiscal decentralisation involves delegating financial authority and responsibilities to regional governments from the national down to the local levels, following specific rules and regulations to guide and control financial expenditures (Aslim & Neyapti, 2017). This approach enhances democratic governance practices and contributes to increased economic efficiency (Meesook et al., 2020). It enables local governments to play a more significant role in the regional economic system and advocates for environmentally sustainable economic development (Wang et al., 2022).

The Village Funds Programmes is a decentralisation program focused on rural development, allowing villages to receive direct funding from the central government for infrastructure and community empowerment (Amin & Widaninggar, 2019). This program provides greater flexibility and autonomy for villages to develop their local potential compared to other decentralisation programmes typically managed at the regional or central government level. First implemented in 2015, the funds underwent refinement in 2017, aimed at enhancing the targeting of fund allocation and improving their effectiveness in promoting rural development and reducing poverty (Permatasari et al., 2021). Supported by Article 25 PMK (Peraturan Menteri Keuangan) Number 247, village funds prioritise development and empowerment, emphasising self-management using local resources and raw materials (Sunarsi et al., 2021). The expectation is that villages can achieve self-sufficiency by maximising their potential and enhancing the quality of life within the community through active participation in their development (Udjianto et al., 2021).

Government Regulation Number 60/2014 states that village funds are used for governance, development, community empowerment, and societal needs (Watts et al., 2019). Village funds are prioritised for four purposes: Village Development (such as meeting basic needs, developing facilities and infrastructure, promoting

local economic potential, and utilising natural resources and areas sustainably), Local Community Empowerment, Village Governance, and Community Empowerment (Susilowati et al., 2018). Since its implementation, village funds have primarily been allocated for infrastructure development, including bridges, water channels, and irrigation systems, with the aim of improving rural community accessibility and mobility, thereby enhancing the village economy (Hilmawan et al., 2023). While the overarching goal of rural development is to alleviate poverty, infrastructure development is essential for poverty reduction as it ensures community access to markets and contributes to overall village advancement (Sutiyo & Maharjan, 2017; Wiratama et al., 2023).

To assess the success of the Village Funds Programme, the government has introduced the Village Development Index (Indeks Desa Membangun, IDM), which incorporates indicators such as essential services, infrastructure, transportation, public services, and village governance administration (Tarlani & Sirajuddin, 2020). Villages are categorised into levels based on this index: very underdeveloped, underdeveloped, developing, developed, and independent (Prasetyo & Sonny, 2020). Evaluating the poverty rate serves as a measure of the program's effectiveness, as a lower poverty rate indicates the efficient use of village funds, leading to increased income and improved quality of life for the community (Andari & Fitria, 2023; Rambe et al., 2022).

Despite these efforts, the impact of village funds on rural development and poverty reduction has shown mixed results, which will be further discussed later. Additionally, no study has yet examined the effect of external shocks, such as the COVID-19 pandemic, on the impacts of village funds, and this study aims to fill this gap. Thus, the objectives of this study are twofold: first, to analyse the impact of the village funds program on rural development and poverty alleviation in Indonesia. Specifically, it investigates the effects of these funds on the Village Development Index and village real income across all recipient regencies from 2018 to 2022. Second, it examines the influence of the COVID-19 pandemic on the program's effectiveness, considering its substantial impact on global and local economies. The findings provide insights into the significance of adaptive measures prioritising crisis response while sustaining long-term rural development and poverty reduction efforts.

LITERATURE REVIEW

Theoretical Review

The theoretical foundation underpinning fiscal decentralisation programmes is the theory of fiscal decentralisation efficiency, originally proposed by Wallace E. Oates in 1972. This theory establishes the central government's crucial role in macroeconomic stabilisation, while local governments are expected to focus on providing public goods with limited consumption, primarily

for their constituents (Jain & Singh, 2022; Oates, 1999). Oates' (1972) theory of fiscal decentralisation emphasises the efficiency of local governance under stable economic conditions. However, recent developments in fiscal federalism theory suggest that the success of decentralisation hinges on the local government's ability to adapt to crises (Eichenbaum et al., 2021). This study seeks to determine whether Indonesia's decentralised village funds program requires greater flexibility during the COVID-19 pandemic, indicating that decentralisation models in Indonesia must incorporate adaptive governance mechanisms to withstand economic shocks.

Fiscal decentralisation involves delegating financial authority and responsibilities to regional governments from the national down to the local levels, following specific rules and regulations to guide and control financial expenditures (Aslim & Neyapti, 2017; Meesook et al., 2020). It is argued that this approach improves democratic governance practices and enhances economic efficiency (Meesook et al., 2020). Centralised fiscal systems are viewed as potentially enabling exploitative actions by the central government (Ding et al., 2019). In contrast, decentralised arrangements promote competition among local governments, limiting the power of a monopolistic central government, fostering local economic growth, ensuring accountability, and yielding improved outcomes for the community (Hanif et al., 2020). In many countries, fiscal decentralisation has been adopted to enhance

the effectiveness of government services and stimulate economic growth (Martinez-Vazquez et al., 2017). Certain nations have embraced decentralisation in response to dissatisfaction with previously unsuccessful central planning methods, particularly observed in former Soviet countries (Siegel, 2022). Decentralisation has also been utilised as a strategy to address conflicts and preserve territorial unity in specific instances (Sutiyo & Maharjan, 2017).

Fiscal decentralisation theory highlights the significance of flexible local governance in addressing local economic challenges and meeting diverse regional needs (Martinez-Vazquez et al., 2017; Rao et al., 2023). The varying impacts observed between Java and non-Java regions underscore this principle, as the theory suggests that the effectiveness of funding can differ based on local governance capacities and socioeconomic conditions (Hilmawan et al., 2023). In non-Java regions, where issues related to infrastructure and poverty are more severe (Mardalena et al., 2023), fund allocation tends to align with theoretical predictions of positive outcomes, owing to targeted local interventions that respond to regional disparities. Nevertheless, several questions remain unclear: How has Indonesia's village funds programme influenced poverty and inequality in underdeveloped villages, particularly during external shocks? Which regions have gained the most benefits?

Empirical Review

The literature on the influence of village funds on rural development and poverty

reduction in Indonesia yields varied and inconsistent findings. As such, the impact of these funds on poverty reduction remains a subject of ongoing analysis. Saragi (2021) argues that the Village Fund Program is a crucial instrument for the Central Government in promoting economic development and addressing inequality and poverty in Indonesian villages. Indraningsih et al. (2021) suggest that village funds positively affect farmers' yield and revenue, as improvements in farming infrastructure and facilities lead to more efficient conveyance of equipment and harvests.

Handayani and Badrudin (2019) find that allocating village funds significantly contributes to economic growth in both potential and underdeveloped areas. Similarly, Amin and Widaninggar (2019) reveal that the efficient utilisation of village funds has a notable impact on capital growth and the fostering of self-sufficiency in Bondowoso Regency in East Java. Hilmawan et al. (2023) demonstrate that village funds have a positive and substantial impact on rural advancement, as measured by the Village Development Index and village income.

However, other studies present a more critical perspective. For instance, Aslan and Wijaya (2019) imply that the role of village fund allocations in Mahakam Ulu Regency falls short of expectations, as these expenditures are considered ineffective in directly reducing poverty due to an excessive focus on infrastructure development. Kalontong et al. (2019) similarly argue that

village funds do not contribute to regional development in Katingan, as the allocated funds are often misdirected, leading to uneven development and limited community empowerment opportunities.

Conversely, Prastyanti et al. (2018) and Ramly et al. (2018) highlight that when the majority of village funds are allocated to infrastructure development, the goal of alleviating poverty is inadequately addressed. They contend that this emphasis on basic amenities projects or enhancing physical capabilities does not effectively contribute to poverty reduction.

Furthermore, the success of village funds in improving social welfare appears to vary by region (Anam et al., 2023). Saragi (2021) finds that increasing allocations of village funds significantly improves the IDM status, with Java contributing more to advancing village status compared to regions like Papua, which consists mostly of the least developed villages. Putra et al. (2023) indicate that village funds reduce the percentage of the poor population in Banjarnegara Regency, while Arham and Hatu (2020) demonstrate that village fund transfers significantly impact poverty rates.

These mixed results emphasise the need to reevaluate the impacts of village funds from a different perspective. Therefore, this study seeks to introduce an additional indicator to measure the success of village development by analysing the village's actual income. The Indonesian Ministry of Finance defines village real income as revenue generated through the exercise of the village's authority, including income from

village enterprises, asset proceeds, voluntary contributions, and mutual assistance. This consideration aligns with Hilmawan et al. (2023) findings suggest that higher village real income corresponds to more advanced development, making it a reliable indicator of a village's developmental level. Hanif et al. (2020) and Sanogo (2019) also support this notion, asserting that an increase in local revenue positively impacts public service accessibility, poverty reduction, and economic growth.

In addition, the study aims to compare the pre-COVID-19 period (2018 to 2020) and the pandemic period (2021 to 2022) in terms of their impact on both Java Island and non-Java Island. Previous research has indicated that before the pandemic, the allocation of village funds effectively contributed to rural development and poverty reduction, particularly in regions outside of Java (Badrudin et al., 2021; Imawan & Purwanto, 2020). However, the COVID-19 pandemic has led to a significant increase in global poverty levels due to the implementation of various government policies to curb the spread of the virus (Rambe et al., 2022). According to Eichenbaum et al. (2021), while these policies effectively save lives, they also

exacerbate the severity of the economic recession. Nevertheless, the impact of village funds on rural development and poverty reduction in Java and non-Java Islands during the pandemic remains unclear and warrants further study.

METHOD

Data

This study examines the impact of fiscal decentralisation through the village funds program on rural development (as measured by the village development index and village real income) and poverty in all regencies/ cities in Indonesia. The analysis is based on panel data from 2018 to 2022, covering 435 regencies/cities that received village funds. The selection of the regencies/cities was based on complete data availability for the entire study period. No specific exclusion criteria were applied, ensuring a comprehensive analysis that includes the entire country. The variables utilised in this study are summarised in Table 1.

The data used in this study were sourced from reliable government databases, including the Department of Village, the Department of Finance and BPS Indonesia. These institutions are recognised for maintaining high standards in data collection

Table 1
Data source and description of variables

Variable	Description	Source
Dependent Variable		
Village funds	Funds originating from the national government budget provided directly to village accounts for village development and empowerment	Department of Village

Table 1 *(continue)*

Variable	Description	Source
Independent Variables		
Village Development Index	An index was created to measure the level of village self-reliance by combining the community resilience index, financial resilience index, and rural environmental resilience index.	Department of Village
Village real income	The revenue obtained from the village's efforts in implementing its authority, including revenue from village business, asset yields, self-help participation, and mutual assistance	Department of Finance
Poverty rate	The percentage of individuals in each regency/city living below the poverty line	BPS-Statistics Indonesia
Gross Domestic Regional Product (GDRP)	The total value of all goods and services produced within a region's borders over a specific period	BPS-Statistics Indonesia
Number of villages	The number of villages within the regency/city	Department of Village

and reporting. To ensure data accuracy, various robustness checks, including the Breusch-Pagan test and outlier analyses, were conducted to identify anomalies and ensure that exceptional data points did not unduly influence the findings.

Empirical Strategy

This study employs panel data analysis to assess the impact of the village funds program on village development and poverty levels. The analysis is divided into two periods: before COVID-19 (2018 to 2020) and during COVID-19 (2021 to 2022). This division is justified by the significant economic disruptions caused by the COVID-19 pandemic, which are likely to have influenced the effectiveness of the village funds program. The years 2018 to 2020 represent a stable period before the pandemic, while 2021 to 2022 capture the ongoing effects of the pandemic on the program.

We developed three estimation models to assess the impact of the village fund program on village development and poverty levels, using individual and time variables for our panel data (represented as *i* and *t*).

Model 1 measures the impact of village funds on rural development. Measured by the village development index, this model includes control variables such as GDRP and the number of villages to account for economic activity and administrative size, which can influence development outcomes. Model 2 measures the impact of village funds on rural development measured by village real income. Village real income indicates economic health and development within the villages, and control variables help isolate the effect of village funds.

Finally, Model 3 measures the impact of village funds on poverty.

$$Village\ Development\ Index_{i,t} = \beta_0 + \beta_1\ Village\ Funds_{i,t} +$$
$$\beta_2 Controls_{i,t} + \varepsilon_{i,t} \qquad [1]$$

$$Village\ Real\ Income_{i,t} = \beta_0 + \beta_1\ Village\ Funds_{i,t} +$$
$$\beta_2 Controls_{i,t} + \varepsilon_{i,t} \qquad [2]$$

$$Poverty_{i,t} = \beta_0 + \beta_1\ Village\ Funds_{i,t} + \beta_2 Controls_{i,t} + \varepsilon_{i,t} \qquad [3]$$

Hypotheses and Regional Analysis

We hypothesise that differences in the characteristics of Java and non-Java Island result in varying responses to government programmes. According to Widiastuti (2020), 57 per cent of the population of Indonesia lived in Java in 2017, with the remaining 43 per cent residing outside the island. Java Island also accounts for 56.4 per cent of the country's GDRP, while the rest is contributed by non-Java areas (Kohardinata et al., 2024). On average, economic activities in Java Island surpass those in other regions (Yudhistira & Sofiyandi, 2018). Hence, we examine the influence of village funds on rural development and poverty in Java and non-Java islands before and during the COVID-19 pandemic, as we believe the differences in characteristics between these areas will impact the management of village funds.

Multicollinearity and Robustness Check

We used the Pearson correlation matrix and the Variance Inflation Factor (VIF) test to assess multicollinearity. The Pearson correlation matrix results (Table 2) indicate positive and negative relationships between variables. The low correlations with the dependent variables suggest that multicollinearity may not be a significant concern. The VIF values offer further insight into multicollinearity. VIF values approaching 1 suggest minimal multicollinearity, while values between 1 and 5 indicate moderate multicollinearity. VIF values exceeding 10 indicate significant multicollinearity. As demonstrated in Table

Table 2
Correlation matrix

	Village Funds	Village Dev. Index	Village real income	Poverty rate	GDRP	No. of villages
Village funds	1					
Village Dev. Index	-0.22	1				
Village real income	0.40	0.09	1			
Poverty rate	0.72	-0.14	0.63	1		
GDRP	0.40	0.06	0.85	0.59	1	
Number of villages	0.92	-0.19	0.35	0.63	0.35	1
VIF	7.26				6.97	1.20

3, the VIF test results for village funds and GDRP fall between 5 and 10, indicating a moderate level of multicollinearity for these variables. In contrast, the number of villages has a VIF value of 1.20, indicating a low level of multicollinearity.

Despite the moderate VIF values for village funds and GDRP, the overall assessment suggests that multicollinearity is not a critical concern in this study. However, we acknowledge that the observed moderate multicollinearity may impact the regression estimates. We ensured robustness by employing alternative model specifications and checking for consistency across different subsamples to address this.

Robustness and Sensitivity Analysis

We conducted several robustness checks and sensitivity analyses to validate our findings' robustness. These included alternative model specifications and analyses of subsamples from different regions (Java vs. non-Java) and periods (pre-COVID-19 vs. during COVID-19). The results remained consistent across these checks, which reinforces the reliability and validity of our findings. In addition to the aforementioned checks, panel data analysis employing a random effects model was utilised. This model was chosen based on the results of the Chow test, Hausman test, and Breusch-Pagan Lagrange Multiplier (BPLM) test, all of which indicated the superiority of the random effects model in mitigating the inherent omitted variable problem associated with the fixed effects model.

Furthermore, to enhance the accuracy of the results, a natural logarithm transformation was applied to all variables except for the Village Development Index. This transformation serves the purpose of normalising the data and improving the precision of the regression estimates. Moreover, additional robustness checks were conducted to address potential issues such as outliers and heteroskedasticity. The presence of heteroskedasticity was examined using the Breusch-Pagan test, and in light of the results, the standard errors were adjusted accordingly. An outlier analysis was also carried out to ensure that extreme values did not exert undue influence on the findings. Overall, the results of these robustness checks and sensitivity analyses consistently confirmed the reliability and validity of our findings, thereby providing confidence in our conclusions regarding the impact of village funds on rural development and poverty alleviation in Indonesia.

RESULTS

Descriptive Statistics

The summary statistical outcomes (Table 3) reveal that the average village funds received by each regency/city in Indonesia amount to 156,928 million rupiahs. The lowest amount, 1.06 million rupiahs, was received by the Prambulih Regency in the South Sumatra province in 2022. On the other hand, the North Aceh Regency in Aceh Province gained the highest village funds in 2019.

The average Village Development Index stands at 5.93, suggesting that, on average, regencies/cities are still considered underdeveloped. The lowest value, 2,306,

Table 3
Statistic summary

Variables	Obs	Mean	SD	Min	Max
Village Funds ('000,000 rupiahs)	2,170	156,928	99,878	11,064	627,307
Dependent Variable					
Village Dev. Index	2,170	5.93	1.80	2.31	9.22
Village real income ('000,000 rupiahs)	2,170	196,618	347,241	1,270	4,835,190
Poverty ('000)	2,170	5,331	5,851	134	49,124
GDRP (in million rupiah)	2,170	15,257,004	23,805,356	133,354	265,130,821
Number of village(unit)	2,170	170.90	114.60	7.00	852.00

belongs to the Fak Fak Regency in the West Papua Province in 2018, while the highest value belongs to Denpasar City in the Bali Province in 2022.

Furthermore, the average village real income earned by all regencies/cities in Indonesia is 196,618 million rupiahs. The Deiyai Regency in the Papua Province recorded the lowest value of 1,270 million rupiahs in 2018, whereas the Badung Regency in the Bali Province recorded the highest value of 4,835,190 million rupiahs in 2019.

Moreover, the mean poverty headcount in each regency/city in Indonesia is 5,331 people. The Tana Tidung Regency in the North Kalimantan province recorded the lowest number, with 134 thousand people in 2018, while the Bogor Regency in Jawa Barat Province recorded the highest number in 2021.

The average GDRP for Indonesia is 15,257,004 million rupiahs. The Pegunungan Arfak Regency in the West Papua Province had the lowest GDRP value of 133,354 million rupiahs in 2018, while the Bekasi Regency in the West Java Province recorded the highest GDRP value of 265,130,821 million rupiahs in 2022.

Overall Impact of Village Funds

The baseline regression results, as shown in Table 4, indicate a significant positive influence of village funds on rural development, as measured by the Village Development Index and Village Real Income, at a significance level of 1 per cent. This implies that higher levels of village funds contribute to the enhancement of rural development in different regencies and cities across Indonesia. However, it is important to note that while village funds have a positive impact on these development indicators, they do not significantly alleviate poverty.

The control variable, GDRP, demonstrates a significant positive effect on both rural development and poverty. This suggests that higher levels of GDRP are associated with increased rural development but also correspond to higher poverty levels. This finding, which may seem counterintuitive, highlights that economic growth alone may not be sufficient to reduce poverty (Aslan & Wijaya, 2019). It implies

Table 4

Effect of village funds on rural development and poverty (baseline regression)

	Rural Development		Poverty
	Village Dev. Index	Village Real Income	Poverty Rate
Village Funds	1.48 (9.42)***	0.27 (5.38)***	0.04 (3.68)***
GDRP	0.39 (5.59)***	0.79 (35.33)***	0.07 (4.93)***
No.r of villages	-1.99 (-11.62)***	-0.15 (-2.72)***	0.80 (18.47)***
_cons	-33.74 (-9.21)***	-4.38 (-3.72)***	7.47 (14.50)***
N	2,170	2,168	2,170
N_g	434	434	434
R^2	0.0114	0.7705	0.4733

Note. T-statistic parentheses. $*p<0.1$; $**p<0.05$; $***p<0.01$

the need for targeted poverty alleviation strategies (Chakrabarti & Dhar, 2013). Conversely, a greater number of villages within a regency may hinder development efforts due to the complexity and resources required to manage multiple villages (Ariyanto & Nugraha, 2024). Additionally, a higher number of villages may indicate a larger population, which could contribute to increased levels of poverty.

Considering the onset of the COVID-19 pandemic during the research period, we conducted an analysis to assess whether the impact of village funds on rural development and poverty differed before and during the pandemic. This analysis provides valuable insights into how external shocks such as the pandemic may influence the effectiveness of fiscal decentralisation programmes.

Pre-COVID-19 Period (2018-2020) vs. COVID-19 Period (2021-2022)

Before the COVID-19 pandemic, it was observed that village funds had a significantly positive impact on rural development and a significantly negative impact on the poverty rate, both with a 1 per cent level of significance (Table 5). This implies that the provision of village funds succeeded in enhancing rural development and diminishing poverty during this particular period. Furthermore, the GDRP demonstrated a significant positive relationship with both rural development and poverty, indicating that higher economic output contributes to improved development outcomes, although it does not necessarily reduce poverty.

The number of villages exhibited a significant adverse effect on rural development while simultaneously displaying a significant positive effect on poverty. This suggests that an increased number of villages within a regency or city may dilute the impact of development initiatives and be associated with higher levels of poverty (Ariyanto & Nugraha, 2024).

During the COVID-19 pandemic, the impact of village funds on the Village Development Index was significantly negative, with a 1 per cent level of

Table 5

Effect of village funds on rural development and poverty (before and during COVID-19)

	Before COVID-19			During COVID-19		
	Rural Development		Poverty	Rural Development		Poverty
	Village Dev. Index	Village Real Income	Poverty Rate	Village Dev. Index	Village Real Income	Poverty Rate
Village funds	2.27 (10.83)***	0.23 (4.45)***	-0.09 (-7.35)***	-1.19 (-8.69)***	0.19 (2.56)**	0.18 (9.49)***
GDRP	0.15 (2.07)**	0.77 (32.69)***	0.20 (8.64)***	0.29 (4.31)***	0.83 (34.13)***	0.17 (6.43)***
No. of villages	-2.43 (-11.90)***	-0.10 (-1.81)*	0.85 (18.78)***	0.23(1.41)	-0.11(-1.55)	0.63 (12.04)***
_cons	-45.15 (-9.71)***	-2.99 (-2.48)**	7.14 (11.44)***	26.88 (7.75)***	-3.83 (-2.29)**	2.14 (2.31)***
N	1,302	1,302	1,302	868	866	868
N_g	434	434	434	434	434	434
R^2	0.0015	0.7536	0.5172	0.1246	0.7727	0.5535

Note. T-statistic parentheses. *$p<0.1$; **$p<0.05$; ***$p<0.01$

significance, indicating that the effectiveness of these funds in promoting rural development was diminished during this crisis period (Table 5). However, village funds still managed to increase village real income, as evidenced by their significant positive impact at a 5 per cent level of significance. On the other hand, village funds could not alleviate poverty during the pandemic. This suggests that the economic disruptions caused by the pandemic overshadowed the potential benefits of the village funds program (Rambe et al., 2022).

GDRP demonstrated a significantly positive relationship with rural development and the poverty rate at the 1 per cent significance level. Additionally, the number of villages exhibited a positive effect on the Village Development Index and poverty rate while simultaneously having a negative impact on village real income.

These results highlight the differential impacts of village funds before and during the pandemic. The effectiveness of village funds in promoting rural development and reducing poverty was significantly hindered during the COVID-19 crisis, highlighting the need for adaptive and resilient fiscal policies in times of economic disruptions (Rao et al., 2023).

Regional Differences: Java vs. non-Java

The analysis revealed significant regional differences in the impact of village funds prior to the pandemic (Table 6). Both Java and non-Java islands experienced a significant positive impact on rural development as a result of village funds. However, only non-Java regions saw a significant reduction in poverty due to the utilisation of these funds. This could be attributed to the higher number of villages

Table 6
Effect of village funds on rural development and poverty in Java and non-Java

Java

	Before COVID-19			During COVID-19		
	Rural Development		Poverty	Rural Development		Poverty
	Village Dev. Index	Village Real Income	Poverty Rate	Village Dev. Index	Village Real Income	Poverty Rate
Village Funds	2.05 (13.80)***	0.30 (5.93)***	0.05 (1.39)	-0.09 (-0.33)	-0.13 (-0.87)	0.16 (1.79)
GDRP	-1.16 (-3.19)***	0.68 (14.71)***	0.04 (0.74)	1.97 (-3.26)***	0.72 (14.56)***	-0.11 (-1.72)
No. of Village	-2.64 (-4.90)***	-0.25 (-3.50)***	0.70 (8.58)***	-2.70 (-3.78)***	0.12(0.83)	0.67 (5.32)***
_cons	1.83 (0.20)	-1.08 (-0.71)	9.72 (6.06)***	-37.9 (-3.26)***	7.48 (2.24)	11.88 (-1.72)
N	258	258	258	172	172	172
N_g	86	86	86	86	86	86
R^2	0.1221	0.7744	0.5816	0.0004	0.7713	0.4920

Non-Java

	Rural Development		Poverty	Rural Development		Poverty
	Village Dev. Index	Village Real Income	Poverty Rate	Village Dev. Index	Village Real Income	Poverty Rate
Village Funds	1.02 (4.78)***	0.17 (2.75)***	-0.11 (-8.92)***	-1.15 (-8.46)***	0.05 (0.70)	0.15 (8.95)***
GDRP	0.47 (-5.84)***	0.68 (24.68)***	0.12 (4.94)***	0.46 (9.06)***	0.74 (26.18)***	0.07 (2.79)***
No. of Village	-1.18 (-6.33)***	-0.11 (-1.85)*	0.68 (13.79)***	0.40 (3.05)***	-0.08 (-1.07)	0.46 (8.87)***
_cons	-28.47 (-5.84)***	1.03 (0.68)	10.65 (16.13)***	20.04 (6.06)***	2.05 (1.02)	6.07 (5.99)***
N	1,044	1,044	1,044	696	694	696
N_g	348	348	348	348	348	348
R^2	0.0638	0.6344	0.3251	0.2613	0.6745	0.3644

Note. T-statistic parentheses. *$p<0.1$; **$p<0.05$; ***$p<0.01$

and greater poverty levels outside Java (Mardalena et al., 2023), which led to more targeted and effective use of village funds.

On Java Island, before the pandemic, GDRP had a significant negative impact on the Village Development Index while displaying a significant positive effect on village real income. However, it did not have any impact on poverty. Furthermore, the number of villages had a significant negative influence on rural development and a significant positive influence on poverty.

During the pandemic, village funds were unable to stimulate rural development or alleviate poverty in either region. The magnitude of the crisis caused by the pandemic exceeded the capabilities of village funds, thereby underscoring the necessity for adaptive fiscal policies that can effectively respond to such disruptions (Rao et al., 2023).

DISCUSSION

From the findings, we can infer that village funds have significantly impacted rural development in all regencies/ cities in Indonesia from 2018 to 2022. This suggests that village funds have successfully contributed to increasing rural development in Indonesia. This is consistent with the findings of Hartojo et al. (2022) and Iskandar and Aritenang (2020), who observed that village funds have strengthened the local economy by harnessing its economic potential. Consequently, this has led to increased income levels, higher employment rates, and reduced transportation costs, collectively

benefiting both rural communities and the overall development of these regions.

Nonetheless, it should be noted that village funds have not shown any impact on poverty reduction. Various studies indicate that when a significant portion of the village fund is targeted at infrastructure enhancement, the primary objective of alleviating poverty is not adequately addressed (KOMPAK, 2017; Prastyanti et al., 2018; Ramly et al., 2018). Consequently, the village fund and its allocation program fail to contribute effectively to poverty reduction, as the funds continue to be predominantly allocated to infrastructure projects or the enhancement of physical capabilities. Nevertheless, advancements in rural development are expected to stimulate economic growth, which in turn will lead to long-term poverty reduction within villages (Amin & Widaninggar, 2019; Handayani & Badrudin, 2019).

The impact of village funds varies significantly between Java and non-Java regions, with non-Java regions benefiting more. This could be attributed to the relatively underdeveloped infrastructure and higher poverty levels in non-Java regions compared to Java (Mardalena et al., 2023). In these areas, village funds may serve as a critical source of development capital, leading to more pronounced effects. The greater success in reducing poverty outside Java highlights the importance of targeted interventions in areas with higher levels of deprivation (Chakrabarti & Dhar, 2013).

Furthermore, the varying impacts of village funds can also be explained by differences in governance and institutional

capacity across regions. Non-Java regions, despite having more underdeveloped villages, may benefit from more effective local governance structures that prioritise the efficient use of village funds (Hilmawan et al., 2023). In contrast, in more developed regions like Java, where local governments already have access to greater resources, the marginal effect of additional village funds on development and poverty alleviation is diminished (Saragi, 2021).

The economic structure of the regions also plays a critical role in the varying impacts of village funds. In non-Java regions, which are predominantly agricultural, village funds are often allocated to infrastructure projects that directly support agricultural productivity (Hilmawan et al., 2023). In contrast, Java's economy, being more industrialised, may already have the necessary infrastructure, reducing the relative importance of village funds for poverty reduction (Iskandar & Aritenang, 2020).

The number of villages and population density present contextual challenges in the effective utilisation of village funds. In Java, where population density is high, and there are many villages, resources may be diluted, leading to village funds being spread too thinly across numerous communities, thus diminishing their overall impact (Ariyanto & Nugraha, 2024). In contrast, non-Java regions with fewer but more underdeveloped villages may benefit from more concentrated investments (Mardalena et al., 2023).

Before COVID-19, specifically from 2018 to 2020, village funds successfully enhanced rural development in all districts/cities in Indonesia and significantly reduced poverty. However, during COVID-19, village funds primarily increased real income in the villages but had limited effects on poverty reduction. This shift can be attributed to changes in resource allocation priorities, as the government redirected the allocation of village funds from community development and empowerment to mitigating the immediate effects of COVID-19 and building resilience at the local level (Rambe et al., 2022). Additionally, the village funds program may lack the flexibility needed to adapt quickly to changing circumstances and priorities during a crisis.

The program's rigid procedures and instances of mismanagement may hinder its ability to respond effectively to emerging challenges (Rifai et al., 2024), such as supporting livelihoods, healthcare, and emergency relief efforts. Eichenbaum et al. (2021) imply that while policies aimed at disease suppression may save lives, they can also exacerbate economic downturns, particularly in rural areas. The COVID-19 crisis led to an increase in poverty rates that village funds alone could not address. This suggests that, in the absence of exceptional circumstances such as the pandemic, village funds have the potential to effectively enhance rural development and reduce poverty (Badrudin et al., 2021; Imawan & Purwanto, 2020). However, during crises, more adaptive policies are needed to meet immediate needs while continuing to advance long-term development goals

(Amin & Widaninggar, 2019; Andari & Fitria, 2023; Handayani & Badrudin, 2019; Indraningsih et al., 2021).

During COVID-19, village funds failed to stimulate rural development and alleviate poverty. The inability to enhance rural development and alleviate poverty aligns with our initial suspicion that the pandemic created a crisis beyond the capabilities of village funds to overcome. In light of the significant risks posed by the pandemic to human well-being, the implications for government policy suggest that adapting to the current circumstances is crucial. The government should continue to prioritise crisis response while simultaneously maintaining a balanced approach to rural development and poverty reduction. This necessitates flexibility, long-term planning, consideration of regional disparities, and a commitment to continuous evaluation and adaptation.

CONCLUSION

The government implements village funds to prioritise rural development efforts and alleviate poverty. This study examines the impact of village funds on rural development and poverty reduction in Indonesia using panel data analysis using a random effect model. The findings indicate that village funds have successfully enhanced rural development in Indonesia, particularly before the COVID-19 pandemic. However, the funds were less effective in alleviating poverty, especially during the pandemic, underscoring the need for adaptive and resilient fiscal policies.

Before the pandemic, village funds significantly improved rural development and reduced poverty rates, particularly in non-Java regions. These regions benefited more due to the higher number of villages and greater poverty levels, which led to more targeted and effective use of village funds. During the pandemic, the effectiveness of village funds in promoting rural development was diminished, and they failed to reduce poverty. This suggests that the economic disruptions caused by the pandemic overshadowed the potential benefits of the village funds program.

Theoretical Implications

The findings of this study indicate the need to integrate adaptability and resilience into fiscal decentralisation theory, particularly in contexts of economic disruption. The findings reveal that stable economic conditions are fundamental for the effective operation of decentralised systems, aligning with Oates' (1972) foundational theory of fiscal decentralisation, which emphasises the role of local governments in the efficient provision of public goods. However, the challenges faced during the COVID-19 pandemic suggest that traditional decentralisation models may fall short under extreme external shocks, such as public health crises, which disrupt economic stability and affect localised poverty alleviation efforts. Consequently, this study advocates for an adaptive decentralisation framework, incorporating crisis response capabilities to enable flexibility during unforeseen events.

The study challenges the assumption that decentralisation inherently leads to poverty reduction. Instead, it supports a more dynamic framework that acknowledges regional disparities and the capacity of local governance structures to address these variances effectively. Observations of the varied impact of village funds across regions, with non-Java areas benefiting more than Java, affirm that decentralisation policies need to incorporate tailored interventions to address spatial inequalities. This regional analysis supports the view that fiscal decentralisation must be context-sensitive, with policy adjustments based on regional capacities and specific economic needs (Martinez-Vazquez et al., 2017; Rao et al., 2023).

The study also calls attention to the limitations of a static model of fiscal decentralisation that does not account for crisis management. It suggests that future theoretical models should integrate resilience-building mechanisms, allowing decentralised systems to manage crises without compromising ongoing development goals. This approach broadens fiscal decentralisation theory and provides a framework for addressing poverty in varying economic contexts and regional conditions.

The observed effectiveness of village funds in alleviating poverty, especially during COVID-19, illustrates that stable economic conditions are crucial for decentralisation to succeed (Arham & Hatu, 2020; Handayani & Badrudin, 2019). This finding aligns with recent theories

advocating for resilience and adaptive governance in decentralised frameworks (Wang et al., 2022). Moreover, observed regional differences, with varied impacts between Java and non-Java regions, further support the need for tailored approaches that address spatial inequalities, reinforcing the view that fiscal decentralisation must incorporate targeted interventions to promote equitable regional development.

Policy Implications

The findings of this study suggest several policy implications. First, the village funds programme should integrate mechanisms for rapid fund allocation adjustments in response to crises. Developing a contingency fund within the programme that can be quickly mobilised during emergencies would enhance responsiveness and ensure continued support for vulnerable communities. Second, empowering communities to manage and utilise funds according to their specific needs will lead to more sustainable and inclusive development outcomes. In addition, establishing a monitoring and evaluation framework that includes feedback mechanisms from local communities can help identify areas for improvement and ensure the effective implementation of the village funds program. Continuous evaluation will enable policymakers to make necessary adjustments and improve the program's efficiency (Firdaus et al., 2020). Third, regional development strategies should be designed to ensure the equitable distribution of resources and opportunities, taking into

account the specific needs and characteristics of different areas.

Finally, while infrastructure development remains a key focus of these programmes, critics argue that social funds often perpetuate a form of governance that manages poverty rather than addresses its structural causes. Chakrabarti and Dhar (2013) challenge the traditional World Bank approach by emphasising that social funds do not merely serve as instruments of economic assistance; they also contribute to the subjectification of individuals, shaping them into recipients of aid rather than active agents in their development. This perspective highlights the need for a more comprehensive strategy that extends beyond economic alleviation to consider the broader social and political dimensions of poverty management.

Limitations and Recommendations

This study has several limitations. It relies on governmental data, which may be subject to accuracy and completeness issues. Another limitation is the potential issue of endogeneity, where regions that are already improving might receive more village funds or those with better governance might utilise funds more efficiently, thus complicating the causal interpretation of the results. While the random effects model addresses some omitted variable bias, it cannot fully account for reverse causality or other forms of endogeneity inherent in the allocation of village funds. Additionally, the regional variability within Indonesia's diverse landscape means that local factors

may not be adequately addressed. The analysis period (2018-2022) encompasses the COVID-19 pandemic, introducing unique factors that may not accurately reflect long-term trends. Structural changes in rural areas often require a longer time frame to manifest, and the results may not fully capture these long-term effects.

Future research could address these limitations in several ways. First, it could explore more detailed data, such as extending the analysis period and considering additional variables that influence rural development and poverty. Second, conducting a comparative study of other countries' rural development programmes could provide valuable insights and enhance the generalizability of the findings. Third, a longitudinal study assessing the long-term outcomes of village funds over 10 years (2015–2024) could offer valuable insights into the sustainability and effectiveness of adaptive policies.

ACKNOWLEDGEMENTS

REFERENCES

Amin, S., & Widaninggar, N. (2019). Influence of village funds on capital accumulation and community empowerment. *Economics Development Analysis Journal*, *8*(2), 163-173. https://doi.org/10.15294/edaj.v8i2.27508

Anam, C., Plaček, M., Valentinov, V., & Del Campo, C. (2023). Village funds and poverty reduction in Indonesia: New policy insight. *Discover Global Society*, *1*, Article 14. https://doi.org/10.1007/s44282-023-00016-6

Andari, R. N., & Fitria, R. (2023). Village funds policy and its impact on improvement and autonomy status of villages in Indonesia. *KnE Social Sciences*, *8*(11), 1-30. https://doi.org/10.18502/kss.v8i11.13537

Arham, M. A., & Hatu, R. (2020). Does village fund transfer address the issue of inequality and poverty? A lesson from Indonesia. *The Journal of Asian Finance, Economics and Business, 7*(10), 433-442. https://doi.org/10.13106/jafeb.2020.vol7.no10.433

Ariyanto, E., & Nugraha, M. K. R. (2024). Population vs. poverty level in the future in Indonesia: Holt's linear trend meth. *International Journal of Sustainable Development & Planning*, *19*(7), 2763-2770. https://doi.org/10.18280/ijsdp.190733

Aslan, D. C., & Wijaya, A. (2019). Have village funds impact growth economy and poverty rate? *International Journal of Scientific and Technology Research*, *8*(10), 2601-2605.

Aslim, E. G., & Neyapti, B. (2017). Optimal fiscal decentralization: Redistribution and welfare implications. *Economic Modelling*, *61*, 224-234. https://doi.org/10.1016/j.econmod.2016.12.008

Badrudin, R., Dewanti, B. A., & Siregar, B. (2021). Are village funds effective in improving social welfare in East Indonesia? *Studies of Applied Economics*, *39*(4). https://doi.org/10.25115/eea.v39i4.4876

BPS-Statistics Indonesia. (2024). *Indonesia Poverty Profile, March 2024*. https://www.bps.go.id/en/pressrelease/2024/07/01/2370/in-march-2024--the-poor-population-percentage-decreased-into-9-03-percent-.html

Chakrabarti, A., & Dhar, A. (2013). Social funds, poverty management and subjectification: beyond the World Bank approach. *Cambridge Journal of Economics*, *37*(5), 1035-1055. https://doi.org/10.1093/cje/bes077

Ding, Y., McQuoid, A., & Karayalcin, C. (2019). Fiscal decentralization, fiscal reform, and economic growth in China. *China Economic Review*, *53*, 152-167. https://doi.org/10.1016/j.chieco.2018.08.005

Eichenbaum, M. S., Rebelo, S., & Trabandt, M. (2021). The macroeconomics of epidemics. *The Review of Financial Studies*, *34*(11), 5149-5187. https://doi.org/10.1093/rfs/hhab040

Firdaus, R. B. R., Mohamad, O., Mohammad, T., & Gunaratne, M. S. (2020). Community partnership through knowledge transfer program: Assessment from the perspectives of academics' experience. *SAGE Open*, *10*(4). https://doi.org/10.1177/2158244020980742

Gunaratne, M. S., Firdaus, R. B. R., & Sosai, A. (2023). The importance of multidimensional vulnerability analysis in sustainable development. *Journal of Sustainability Science and Management*, *18*(9), 38-57. http://doi.org/10.46754/jssm.2023.09.004

Handayani, A. P., & Badrudin, R. (2019). Evaluation of village fund allocation on Indonesia. *Journal of Accounting and Investment*, *20*(3), 283-295. https://doi.org/10.18196/jai.2003129

Handoyo, F., Hidayatina, A., & Purwanto, P. (2021). The effect of rural development on poverty gap, poverty severity and local economic growth in Indonesia. *Jurnal Bina Praja*, *13*(3), 369-381. https://doi.org/10.21787/jbp.13.2021.369-381

KOMPAK. (2017). *Village fund and poverty alleviation* (Policy Analysis February 2017). https://

sikompak.bappenas.go.id/storage/app/uploads/public/624/f7b/f6a/624f7bf6aa4b0291550362.pdf

Hanif, I., Wallace, S., & Gago-de-Santos, P. (2020). Economic growth by means of fiscal decentralization: An empirical study for federal developing countries. *SAGE Open*, *10*(4). https://doi.org/10.1177/2158244020968088

Hartojo, N., Ikhsan, M., Dartanto, T., & Sumarto, S. (2022). A growing light in the lagging region in Indonesia: The impact of village fund on rural economic growth. *Economies*, *10*(9), Article 217. https://doi.org/10.3390/economies10090217

Hilmawan, R., Aprianti, Y., Vo, D. T. H., Yudaruddin, R., Bintoro, R. F. A., Fitrianto, Y., & Wahyuningsih, N. (2023). Rural development from village funds, village-owned enterprises, and village original income. *Journal of Open Innovation: Technology, Market, and Complexity*, *9*(4), Article 100159. https://doi.org/10.1016/j.joitmc.2023.100159

Hu, S., Yang, Y., Zheng, H., Mi, C., Ma, T., & Shi, R. (2022). A framework for assessing sustainable agriculture and rural development: A case study of the Beijing-Tianjin-Hebei region, China. *Environmental Impact Assessment Review, 97*, Article 106861. https://doi.org/10.1016/j.eiar.2022.106861

Imawan, S. A., & Purwanto, E. A. (2020). Governing village fund in Indonesia: Is it erradicating poverty? *Policy & Governance Review*, *4*(1), 14-27. https://doi.org/10.30589/pgr.v4i1.169

Indraningsih, K. S., Nahraeni, W., Agustian, A., Gunawan, E., & Syahyuti. (2021). The impact of the use of village funds on sustainable agricultural development. *E3S Web of Conferences*, *232*, Article 01018. https://doi.org/10.1051/e3sconf/202123201018

Iskandar, Z. S., & Aritenang, A. F. (2020). An evaluation of village funds spending to promote sustainable communities: The case Cihideung

Village, West Java. *IOP Conference Series: Earth and Environmental Science*, *447*, Article 012017. https://doi.org/10.1088/1755-1315/447/1/012017

Jain, A., & Singh, A. (2022). Municipal finance: a study of meerut municipal corporation in Uttar Pradesh. *Journal of Research in Humanities and Social Science*, *10*(7), 327-335.

Kalontong, E., Anggraeni, A., & Tiawon, H. (2019). Analysis of village fund management on regional development. *JEJAK: Journal of Economics and Policy*, *12*(2), 498-519. https://doi.org/10.15294/jejak.v12i2.21660

Kohardinata, C., Widianingsih, L. P., Stanley, N., Junianto, Y., Ismawati, A. F., & Sari, E. T. (2024). P2P lending and banking credit for MSMEs and non-MSMEs after COVID-19 pandemic: does it matter? *Decision Science Letters*, *13*(1), 225-236. https://doi.org/10.5267/j.dsl.2023.9.004

Mardalena, M., Adji, A., Rohima, S., Harunurrasyid, H., & Nida, R. (2023). The welfare impact of village fund allocation in Indonesia: The comparative of Java and Non-Java. *Optimum: Jurnal Ekonomi dan Pembangunan*, *13*(2), 207-218. https://doi.org/10.12928/optimum.v13i2.8668

Martinez-Vazquez, J., Lago-Peñas, S., & Sacchi, A. (2017). The impact of fiscal decentralization: A survey. *Journal of Economic Surveys*, *31*(4), 1095-1129. https://doi.org/10.1111/joes.12182

Meesook, K., K. Routray, J., & Ahmad, M. (2020). Rural local government finance and its management in Thailand: Reflections and prospective through Tambon administrative organisations. *International Journal of Rural Management*, *16*(2), 199-224. https://doi.org/10.1177/0973005220945181

Muhtar, E. A., Abdillah, A., Widianingsih, I., & Adikancana, Q. M. (2023). Smart villages, rural development and community vulnerability in Indonesia: A bibliometric analysis. *Cogent Social*

Sciences, *9*(1), Article 2219118. https://doi.org/10.1080/23311886.2023.2219118

Nugroho, A., Amir, H., Maududy, I., & Marlina, I. (2021). Poverty eradication programs in Indonesia: progress, challenges and reforms. *Journal of Policy Modeling*, *43*(6), 1204-1224. https://doi.org/10.1016/j.jpolmod.2021.05.002

Oates, W. E. (1972). *Fiscal federalism*. Harcourt Brace Jovanovich.

Oates, W. E. (1999). An essay on fiscal federalism. *Journal of Economic Literature*, *37*(3), 1120-1149. https://doi.org/10.1257/jel.37.3.1120

Permatasari, P., Ilman, A. S., Tilt, C. A., Lestari, D., Islam, S., Tenrini, R. H., Rahman, A. B., Samosir, A. P., & Wardhana, I. W. (2021). The village fund program in Indonesia: measuring the effectiveness and alignment to sustainable development goals. *Sustainability*, *13*(21), Article 12294. https://doi.org/10.3390/su132112294

Prasetyo, A. D., & Sonny, E. (2020). The analysis of determinants of developing village index in Indonesia. *The Asian Journal of Technology Management*, *13*(2), 158-172. https://doi.org/10.12695/ajtm.2020.13.2.5

Prastyanti, M. A. S., Subejo, S., & Sulhan, M. (2018). Poverty: A never ending homework in rural development. *Academic Research International*, *9*(3), 124-134.

Putra, N. A., Badriah, L. S., Suparno, C., & Soedirman, U. J. (2023). The effect of village funds, village fund allocations, tax, and levy revenue sharing funds on poverty in Banjarnegara regency. *EKO-REGIONAL: Jurnal Pembangunan Ekonomi Wilayah*, *18*(1), 73-86. https://doi.org/10.32424/1.erjpe.2023.18.1.3312

Rambe, R. A., Purmini, P., Armelly, A., Alfansi, L., & Febriani, R. E. (2022). Efficiency comparison of pro-growth poverty reduction spending before and during the COVID-19 pandemic: A study of regional governments in Indonesia. *Economies*, *10*(6), Article 150. https://doi.org/10.3390/economies10060150

Ramly, A. R., Wahyuddin, W., Mursyida, J., & Mawardati, M. (2018). The implementation of village fund policy in improving economy of village society. *Jurnal Ilmiah Peuradeun*, *6*(3), 459-478. https://doi.org/10.26811/peuradeun.v6i3.184

Rao, M., Musso, J. A., & Young, M. M. (2023). Resist, recover, renew: Fiscal resilience as a strategic response to economic uncertainty. *The American Review of Public Administration*, *53*(7-8), 296-315. https://doi.org/10.1177/02750740231186424

Rifai, R., Kamaluddin, K., & Hidayat, R. (2024). Exploring the roots and solutions of maladministration, power abuse, or corruption in contemporary Indonesian villages. *Pertanika Journal of Social Sciences & Humanities*, *32*(3), 1115-1140. https://doi.org/10.47836/pjssh.32.3.15

Sanogo, T. (2019). Does fiscal decentralization enhance citizens' access to public services and reduce poverty? Evidence from Côte d'Ivoire municipalities in a conflict setting. *World Development*, *113*, 204-221. https://doi.org/10.1016/j.worlddev.2018.09.008

Santoso, A. B., Kurniawan, E., & Syifauddin, M. (2019). The development of eco-edutourism village in Mangrove Tapak forest area, Tugurejo, Tugu sub-district as a community-based tourism. *Proceedings of the International Conference on Rural Studies in Asia (ICoRSIA 2018)*, *313*(ICoRSIA 2018), 328-333. https://doi.org/10.2991/icorsia-18.2019.79

Saragi, N. B. (2021). Indonesia's village fund program: Does it contribute to poverty reduction? *Jurnal Bina Praja*, *13*, 65-80. https://doi.org/10.21787/jpb.13.2021.65-80

Sarjiyanto, Sarwoto, Gunaratne, M. S., & Firdaus, R. B. R. (2023). Sustainable industry, culture

and community development: A case study of Kampung Batik Laweyan, Indonesia. *Journal of Sustainability Science and Management*, *18*(1), 163-180. http://doi.org/10.46754/jssm.2023.01.010

Siegel, D. (2022). Decentralization, legitimacy, and democracy in post-Soviet Central Asia. *Journal of Eurasian Studies*, *13*(1), 66-81. https://doi.org/10.1177/18793665211068525

Subiyantoro, H. (2010). Managing development assistance to improve fiscal decentralization in Indonesia. *International Journal of Economic Policy Studies*, *5*, 1-11. https://doi.org/10.1007/BF03405724

Sunarsi, D., Maddinsyah, A., & Kristianti, L. S. (2021). Analysis of the effectiveness of village funds in independent village development efforts (study at Cidokom Village, Gunung Sindur, Bogor Regency). *Proceedings of the 1st International Conference on Research in Social Sciences and Humanities (ICORSH 2020)*, *584*(ICORSH 2020), 195-203.

Susilowati, N., Herdiani, A., & Widhiastuti, R. (2018). Village community participation model in village funds management to exteriorize the accountability. *KnE Social Sciences*, *3*(10), 1024-1038. https://doi.org/10.18502/kss.v3i10.3190

Sutiyo, & Maharjan, K. L. (Eds.). (2017). *Decentralization and rural development in Indonesia*. SpringeR. https://doi.org/10.1007/978-981-10-3208-0

Tarlani, & Sirajuddin, T. (2020). Rural development strategies in Indonesia: Managing villages to achieve sustainable development. *IOP Conference Series: Earth and Environmental Science*, *447*(1), Article 012066. https://doi.org/10.1088/1755-1315/447/1/012066

Udjianto, D., Hakim, A., Domai, T., Suryadi, S., & Hayat, H. (2021). Community development and economic welfare through the village fund policy. *Journal of Asian Finance, Economics and Business*, *8*(1), 563-572. https://doi.org/10.13106/jafeb.2021.vol8.no1.563

Wang, B., Liu, F., & Yang, S. (2022). Green economic development under the fiscal decentralization system: Evidence from China. *Frontiers in Environmental Science, 10*, Article 955121. https://doi.org/10.3389/fenvs.2022.955121

Watts, J. D., Tacconi, L., Irawan, S., & Wijaya, A. H. (2019). Village transfers for the environment: Lessons from community-based development programs and the village fund. *Forest Policy and Economics*, *108*, Article 101863. https://doi.org/10.1016/j.forpol.2019.01.008

Widiastuti, W. (2020). Domestic tourism in Indonesia: Another story of inequality between Java and non-Java. *Journal of Indonesian Tourism and Development Studies*, *8*(1), 45-49. https://doi.org/10.21776/ub.jitode.2020.008.01.07

Wiratama, B. F., Kurniawan, R., Mulyanto, Isnaeni, M. A., Sumargo, B., & Gio, P. U. (2023). Measuring the physical infrastructure development as poverty reduction program in Kalimantan, Indonesia. *Cities*, *141*, Article 104515. https://doi.org/10.1016/j.cities.2023.104515

Yudhistira, M. H., & Sofiyandi, Y. (2018). Seaport status, port access, and regional economic development in Indonesia. *Maritime Economics & Logistics*, *20*(4), 549-568. https://doi.org/10.1057/s41278-017-0089-1

Does Religiosity Matter? A Comparative Study of Online Purchase Intention of Sharia Fashion Products Among Muslim Women

Candra Kusuma Wardana[1]*, Novel Idris Abas[1], Laila Oshiana Fitria A'zizah[2] and Dewita Puspawati[2]

[1]*Management Department, Faculty of Economic and Business, Universitas Muhammadiyah Surakarta, 57162 Central Java, Indonesia*
[2]*Accounting Department, Faculty of Economic and Business, Universitas Muhammadiyah Surakarta, 57162 Central Java, Indonesia*

ABSTRACT

Indonesia is known as the country with the largest Muslim population in the world. Many companies are currently working hard to fulfill customers' primary need, which is fashion, especially for women. On the other hand, companies need to adjust their style in line with customer faith and social norms. Therefore, this research analyzes the effect of customer religiosity, product knowledge, subjective norm, perceived behavioral control, and attitude toward their online purchase intention. The study targeted the respondents who wore Sharia and non-Sharia fashion styles by constructing the Theory of Planned Behavior (TPB) conceptual model, using structural equation modeling partial least square (SEM-PLS) tools. The survey used purposive sampling as the sampling method, and 408 respondents were analyzed using the Likert scale. The result from Muslim women who wear Sharia and Non-Sharia fashion styles respondents shows that subjective norms and perceived behavioral control have significant effects on online purchase intention. In Indonesia, social values have become crucial predictors that could influence consumer behavior. Religiosity seems to have a lesser influence on online fashion choices. Consumers are deterred from choosing Sharia fashion due to negative experiences, low seller reputation and poor product quality. These findings will assist business owners selling the product online to develop a content strategy that uses colorful products, flexible design, and outstanding quality. It is also necessary to provide a detailed video regarding product specifications.

Keywords: Attitude, fashion, Muslim women, online purchase intention, religiosity

INTRODUCTION

People can easily express their personalities using clothing styles (Efremov et al., 2021; Maran et al., 2021). A current study asserts that fashion gives a picture of someone's character. For example, women who identify with urban style tend to be more flexible, creative, casual, and open-minded (Stolovy, 2021). How people dress reveals their taste, lifestyle, inner feelings, and knowledge regarding current trends (de Jong et al., 1976). For Muslim, there are certain regulations in the Quran when internalizing faith in cloth. Muslims must obey the guidelines, and it will affect their consumption behavior (Rahman et al., 2017). Many scholars agree that religion and consumption are inseparable (Khan & Kirmani, 2018).

Religiosity influences people's consumption, especially their fashion style (Aruan & Wirdania, 2020). Studies related to fashion purchasing behavior have shown that people's level of religiosity is a significant factor that contributes to determining people's intention to purchase products (Bukhari et al., 2020; Rahman et al., 2017; Wang et al., 2020). On the other hand, there are also some inconsistent findings related to the relationship between religiosity and customer purchase intention, which means this concept needs to be clarified whether customers' level of religiosity affects their intention to buy clothes directly or indirectly (Nickerson et al., 2023).

Numerous studies state that religious people tend to have low intentions for fashion (Kusumawati et al., 2019). Physical appearance is only partially crucial for people with a high level of religiosity. It means that fashion is contrary to the religion's teachings. Some religions explicitly state how people should dress up (Almila, 2020). Islam commonly asserts that Muslim women must dress modestly and wear reserved attire (Kamarulzaman & Shaari, 2020). In *The Quran* (2015), Surah An-Nur verse 31 states that women should obey specific criteria: "lower their gaze and guard their chastity, and not to reveal their adornments except what normally appears. Let them draw their veils over their chests. Let them not stomp their feet, drawing attention to their hidden adornments." Thus, the consumers might come up with a question: How do they present their self-concept while obeying the Quran?

The discussion topic on how Muslims should dress up is quite interesting. Moreover, the data shows an increasing trend in the Muslim fashion clothing market. In 2019, the Muslim fashion industry was valued $277 billion, estimated to grow at a 5-year of 2.4% to reach $311 billion by 2024 (*State of The Global Islamic Economy Report 2020/21*, 2020). The upward trend is not solely dependent on sales but also on the diversification of appearances, hues, patterns, and styles, which becomes a clue of the transition from modesty to modern (Shirazi et al., 2021).

Furthermore, a report by the Pew Research Center (2015) states that the Muslim population is predicted to become the largest majority community in the world in 2050, with Indonesia having the

third-largest number of Muslims in the world (242 million; Stirling, 2024). In the marketing context, such a trend could potentially affect the fashion industry in the future, particularly in Asia. Thus, designers, marketers, professionals, business owners, and other players must watch this opportunity.

This study investigates the impact of customer religiosity and product knowledge on their online purchase intention, especially for Muslim women, by incorporating the Theory of Planned Behavior (TPB). However, as far as our knowledge goes, no empirical research has been conducted in Indonesia that combines religiosity and product knowledge with TPB to elucidate customers' online purchase intention. This study is also eager to identify whether the differences between women who wear Sharia and Non-Sharia clothes affect attitudes. If so, the findings can become references to predict future purchasing by looking at the type of clothes that they wear. Marketers and designers also would benefit from this research's findings in creating programs directly for the target market, specifically Muslim women.

LITERATURE REVIEW

Theory of Planned Behavior

The Theory of Planned Behavior (TPB) is the concept that examines the factors that may influence people's behavior, especially the intention to do something. The contributing factors that built TPB are subjective norms, attitude, and perceived behavioral control (Ajzen, 1991).

Furthermore, TPB is the development concept of the Theory of Reasoned Action (TRA), which also analyzes the consumers' attitude-behavior (Farid et al., 2023). Attitude toward a product means how people react toward products or services. Subjective norm refers to the community values that affect consumers' behavior. Then, the intention to purchase means a person's motivation and willingness to engage in particular conditions. Concerning technological advances, intention is also happening online (Awal et al., 2023). Since online platforms simplify consumers' buying process (Kraiwanit et al., 2023), there are some stimuli created by business owners to trigger customers' online purchase intention (Peña-García et al., 2020). Subsequently, perceived behavioral control means the degree of ease or difficulty in performing the behavior.

Prior studies revealed that TPB had been effectively investigating consumers' motives in various contexts, specifically on crowdfunding services (Kazaure et al., 2020), fashion (Kusumawati et al., 2020), cosmetics (Najib et al., 2022), luxury goods (Ma et al., 2021), religiously product (Mortimer et al., 2020), electronic products (Silalahi et al., 2021), halal food (Kaur et al., 2023), and green hotel selection (Wang & Zhang, 2021). TPB framework has also been applied in various contexts, such as in developing countries like Indonesia (Gunawan et al., 2022), Malaysia (Uthamaputhran et al., 2021), and Thailand (Watakakosol et al., 2021).

In the focal context, we applied TPB to assess the antecedents of online purchasing intention for women's fashion products. TPB framework commonly used attitude, subjective norm, and perceived behavioral control as independent variables. We extended the TPB model by adding product knowledge and religiosity as crucial antecedents of online purchase intention. Product knowledge encompasses factual information about the product and people's beliefs toward the product. By comprehending customer knowledge, researchers and marketers can examine which product characteristics will likely lead to consumers' perceptions. Meanwhile, religiosity refers to personal beliefs influencing their motivation to engage in a specific action. In terms of purchasing Sharia products, analyzing consumers' religiosity will determine whether individuals' internal motivation can effectively shape their intention to purchase products online. Moreover, some studies revealed that product knowledge and religiosity proved to play an important role in predicting consumer purchase intention (Mortimer et al., 2020; Nurhayati & Hendar, 2020). Therefore, we argue that these new variables are essential to be evaluated in this study.

Attitude (ATT) and Online Purchase Intention (OPI)

Attitude refers to a holistic appraisal carried out by an individual towards a specific concept, which can be either cognitive or affective (Peter & Olson, 2016). Ajzen (1991) explains that attitude is a personal

product evaluation. In online purchase intention for women's fashion products, attitude represents the individual's positive or negative perception of the act (Lee & Chow, 2020). A recent study showed that consumers' attitudes toward fashion quality, price, style, fit, trend, and shopping experience are more valued than other aspects (Cairns et al., 2022). Accordingly, online stores should keep an eye on style, fit, trend, and shopping experience, which represent outstanding product quality. Prior studies found that attitude strongly correlates with consumers' purchase intention (Farid et al., 2023; Folkvord et al., 2021; Pandey & Yadav, 2023). Various platforms, such as e-commerce and social media, can facilitate online transactions anytime and anywhere. Since attitude becomes one of the contributors to consumer willingness to purchase online, the hypothesis would be:

> **H1:** Attitude significantly correlates with online purchase intention of Muslim women's fashion styles.

Subjective Norm (SN) and Online Purchase Intention (OPI)

Subjective norms refer to social values influencing someone to make specific decisions (Singh et al., 2022). Ajzen (1991) explains that subjective norm refers to individual feelings of social pressure to perform any behavior. Social values are also defined as personal perceptions toward pressure and expectations given by the community (Tseng et al., 2022). If social values are internalized into someone's behaviors, it could motivate them to comply

with other people's views. Ethnic, religious, and even family habits influence Muslim purchasing activity in fashion. In online purchasing for women's fashion products, subjective norm represents the degree to which consumers will resist or support in the face of social pressure, such as family or friends (Salim et al., 2022). Accordingly, the subjective norm is considered an essential factor that reflects the social environment toward online purchasing for women's fashion products.

A previous study by Hasbullah et al. (2016) and Khoa (2023) stated that subjective norm effectively influences online purchase intention. Besides, Farid et al. (2023) found that subjective norms do not significantly influence purchase intention. Thus, subjective norms become crucial in purchasing Muslim women's fashion (Hasyim, 2022; Ma et al., 2021). Based on the description, the researcher presents the following hypothesis:

H2: Subjective norms are significantly related to the intention to purchase Muslim women's fashion styles online.

Perceived Behavioral Control (PBC) and Online Purchase Intention (OPI)

Perceived behavioral control (PBC) refers to the degree of someone's perceived beliefs in performing the behavior of interest, which is either easy or difficult (Ajzen, 1991). Perceived behavioral control can become essential in influencing someone's behavior (Fishbein & Ajzen, 2005). In online purchasing for women's fashion products, perceived behavioral control

can be as individuals' rationalization when purchasing the products and their ability to use information based on the conditions where they are located (Salim et al., 2022). The dimensions of perceived behavioral control that possibly limit consumers to act are control beliefs, power of control beliefs, and technology (Ajzen, 2005). The prior studies used perceived behavioral control to identify factors that may affect consumers to purchase specific products (Govaerts & Olsen, 2023). However, there are no inconsistent findings regarding the influence of PBC on online purchase intention. Farid et al. (2023) found that there is no significant effect of PBC on intention to purchase products in Bangladesh, while Peña-García et al. (2020) discovered that perceived behavioral control (PBC) has a substantial impact on customers' online purchase intentions. Consequently, we proposed the following hypothesis:

H3: Perceived behavioral control is significantly related to the online purchase intention of Muslim women's fashion styles.

Product Knowledge (PK) and Attitude (ATT) on Online Purchase Intention (OPI)

Product knowledge is a process of identifying a product's characteristics or attributes, the functional benefit of product usage, and customer value achievement over the product (Peter & Olson, 2016). The other views state that customer knowledge is about perception, which includes before and after using the product (Kotler & Keller,

2016). Customers use their knowledge to find the right product (Muadzin & Lenggogeni, 2021). Consumers' knowledge about a product will influence their decision-making process (Nurhayati & Hendar, 2020; Wardana & Widowati, 2021). In the context of purchasing Sharia women's fashion clothes, every Muslim is required to buy the products that are allowed or permitted in Islamic law. Sharia fashion for women means the material quality and style of the products should be approved by Islamic teachings (Aruan & Wirdania, 2020). Previous scholars also found that product knowledge significantly influences attitudes and consumers' purchase intentions (Millatina, 2022; Tseng et al., 2022). On the other side, scholars also found that product knowledge significantly affects consumers' purchase intention (Nurhayati & Hendar, 2020; Sun & Wang, 2020). Thus, the hypotheses that we proposed can be:

H4: Product knowledge has a significant relationship with attitude.

H5: Product knowledge is significantly related to online purchase intention of Muslim women's fashion styles.

Religiosity (RE) and Attitude (ATT) on Online Purchase Intention (OPI)

There are numerous definitions and conceptualizations of religiosity. Alam et al. (2011) stated that religion is a way of life that forms a set of behaviors. People who engage so much with religion could have a high level of religiosity (Tennakoon & Lasanthika, 2018). They would use

religious beliefs as a reference in an activity (Cornwall et al., 1986). On the other hand, Delener (1990) noticed that religiosity is a degree of belief in any specific values held and practiced by an individual. Many studies discuss people's religiosity (Clayton & Gladden, 1974; Cornwall et al., 1986; de Jong et al., 1976).

Scholars agree that religiosity is not only depicted in what a person believes but also revealed in what he/she does. In this regard, the RE construct is multidimensional, and the way to measure religiosity is known as 5D religiosity (Glock, 1962). Aruan and Wirdania (2020) adopted five dimensions of religiosity, where ideological, ritual, intellectual, consequential, and experiential are measured. In the context of purchasing Sharia women's fashion products, religiosity refers to an individual's motivation intensity to fulfill the requirements of religion when buying fashion products (Ustaahmetoğlu, 2020). Consumers with high levels of religiosity have less flexibility and tolerance for their consumption; the opposite situation occurs for those who possess low levels of religiosity (Delener, 1990).

Prior studies revealed that religiosity is a crucial predictor of consumers' purchase intention. A notable study by Kaur et al. (2023) emphasized that religiosity can influence people's purchase intentions when it comes to the sale of halal products in countries where the Muslim population is the majority. Marketers should strategize their advertising of halal products while considering individuals' religiosity. Alotaibi and Abbas (2023) also stated that religiosity

can affect green purchase behavior. Spiritual well-being contributes to individual motivation to purchase green products. In contrast, a study by Ratnasari et al. (2023) revealed that religiosity weakened the influence of attitude on people's intention to buy luxury cars. Thus, investigating religiosity in Sharia fashion products is crucial, as fashion is often assumed to be fashionable, which somehow does not align with Islamic teachings. Moreover, analyzing people's religiosity toward attitude and purchase intention is also needed due to inconsistent findings in the field conducted by some researchers (Nickerson et al., 2023; Ratnasari et al., 2021; Yaakop et al., 2021). Therefore, those empirical findings adopt the hypotheses below.

H6: Religion has a significant relationship with attitude.

H7: Religiosity is significantly related to the intention to purchase Muslim women's fashion styles online.

The research framework is presented in Figure 1.

METHODS

Data Collection Procedure

This research employed a descriptive cross-sectional study examining the outcome's exposure using a cross-sectional approach (Akram et al., 2023). The data were collected from Indonesia's Muslim women for three months and analyzed using PLS software.

Sample Size and Respondent Profile

A survey was carried out by distributing an online questionnaire to the respondents. The participants involved in this research were Indonesian Muslim women who dressed in Sharia and Non-Sharia fashion styles. The respondents were selected based on purposive sampling, consisting of several criteria, such as having experience purchasing fashion products online. The sample collection is based on the Maximum
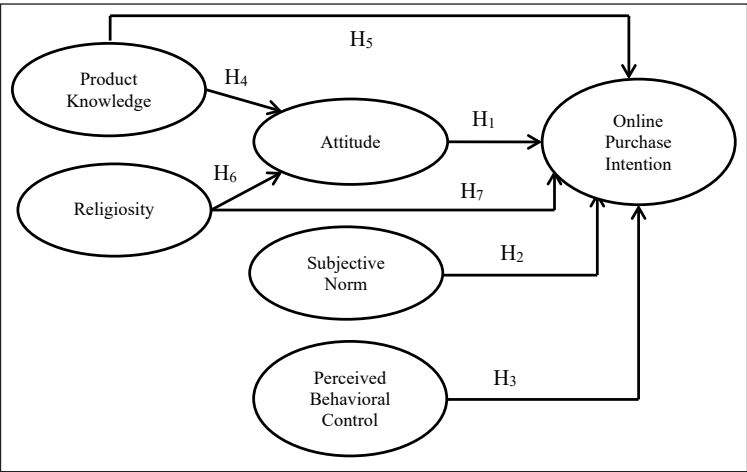
Figure 1. Research framework

Likelihood (ML) estimation, which suggests that the sample size is between 100 and 200 (Ghozali, 2017). The study involved large samples with more than 200 respondents.

On the first page of the questionnaire, the respondents were asked two models of fashion style, Sharia and Non-Sharia, as a stimulus, followed by demographic questions and the purchasing behavior of the respondents. For the variable questionnaire, the respondents were asked to answer the question using a five-point Likert scale with different levels of agreement (1 = strongly agree, 5 = strongly disagree). The survey was conducted in Central Java and DI in Yogyakarta Province, where many students and urban people stay to study and work. The online questionnaire was distributed using Google Forms through several social media platforms, including WhatsApp, Instagram, and Telegram, from 13 April to 5 June 2023, and it obtained as many as 487 respondents.

Measurement

Some researchers adopted measurement indicators in this study. Attitude indicators were adopted from Rausch and Kopplin (2021) and Zhao et al. (2019). Subsequently, subjective norm indicators were adopted from Gundala et al. (2022) and Islam et al. (2022). Perceived Behavioral Control indicators were adopted from Islam et al. (2022) and Sun and Wang (2020). Online purchase intention indicators were adopted from Li et al. (2025) and Lu and Chen (2021). Moreover, product knowledge indicators were adopted from Rakib et al.

(2022) and Sun and Wang (2020). Lastly, religiosity indicators were adopted from Aruan and Wirdania (2020).

Statistical Data Analysis

SmartPLS is used to perform Structural Equation Modeling (SEM). Complex cause-and-effect relationship models can be estimated using the partial least structural equation modeling (PLS-SEM) method (Cepeda-Carrion et al., 2019). Higher-order constructs and complex conceptual models with mediation can also be assessed with contrasting covariance-based approaches (Peng & Lai, 2012). The validity analysis in this study was justified by looking at the value of the loading factor or Confirmatory Factor Analysis (CFA). Achmad et al. (2021) stated that if the loading factor of the indicator is greater than 0.7, the questionnaire item is valid. The reliability testing was identified by looking at the value of Cronbach's alpha. The construct is reliable when the value is greater than 0.7, classified as excellent or consistent (Achmad et al., 2021). Hypothesis testing in this study used the Structural Equation Modeling (SEM) approach, which is processed by Smart-PLS software.

RESULT

Data Analysis

Smart-PLS software was utilized to analyze the partial least squares structural equation (PLS-SEM). Prior studies revealed that PLS-SEM suits explorative research and target prediction (Uzir et al., 2023). The analysis method is also flexible regarding

non-normal data and sample size. Therefore, this study used SmartPLS to assess the hypotheses. The analysis started with a measurement test and was continued with a structural model test.

Demographic Characteristic

Data in Table 1 displays the demographic profile of respondents. A total of 478 participants were initially collected, but only 450 (92% of the total respondents) were eligible for analysis as they did not meet the specified criteria. All respondents identified as Muslims, and 37 were removed from the analysis. They were found to possess other religions and identified as male. In addition, we utilized the Mahalanobis distance to assess the presence of outliers. A significant test at $p < 0.001$ was conducted for statistical validity and outlier detection (Garson, 2016). This process identified 42 outliers, which were removed, resulting in

a final sample of 408 responses for further examination.

All the respondents were female, and most were in the 20–25 age group (63.24%). Respondents with educational backgrounds from Senior High School and Bachelor's were dominant (48.04% and 46.08%, respectively). Students (34.31%) and private sector employees (33.28%) were the two categories who filled out the form the most. Subsequently, the frequency of fashion purchases using online platforms was found to vary. 36.76% of the respondents purchased 3–5 times a year, while 27.70% only purchased less than three times a year. Besides, 16.42% purchased fashion by online platforms 6–8 times a year, and the rest purchased more than eight times yearly (19.12%). In contrast, the respondents only put a small portion of their money into purchasing fashion products monthly, less than Rp 300.000 or equivalent to 62.01%.

Table 1
Profile of respondents

Demographic Variables	Frequency	Percentage
Gender		
Male	0	
Female	408	100
Age (years old)		
< 20	68	16.7
20–25	258	63.24
26–30	56	13.73
31–35	9	2.21
36–40	7	1.72
Above 40 years old	10	2.45
Religion		
Islam	408	100
Others	0	

Table 1 *(continue)*

Demographic Variables	Frequency	Percentage
Education Background		
Junior High School	6	1.47
Senior High School	196	48.04
Bachelor	188	46.08
Master	18	4.41
Occupation		
Student	140	34.31
University Student	38	9.31
Private Sector Employee	95	23.28
Entrepreneur	36	8.82
Public Servant	11	2.70
Others	88	21.57
How Many Times Do You Purchase Fashion Product Online in a Year?		
Less than 3 times	113	27.70
3–5 times	150	36.76
6–8 times	67	16.42
More than 8 times	78	19.12
How Much Money Did You Spend on Purchasing Fashion Products Online in a Month (currency: Rp)?		
Less than 300.000	253	62.01
300.001–500.000	113	27.70
500.001–700.000	28	6.86
700.001–1.000.000	8	1.96
More than 1.000.000	6	1.47
Type of respondents*		
Sharia respondent	134	32.84
Non-Sharia respondent	274	67.16

Note. *Sharia respondents refer to women who wore Sharia clothes, while Non-Sharia respondents refer to women who wore Non-Sharia clothes

Measurement Model

According to Achmad et al. (2021), assessment of validity testing involves the evaluation of the average variance extracted value (AVE) and factor loading. The outer loading value should exceed 0.7, and the AVE value should surpass 0.5 to accomplish convergent validity. As seen in Table 2, outer loading for all items is above the benchmark value of 0.7. Also, all constructs' average variance extracted value (AVE) value was 0.608–0.694 or greater than 0.5. Therefore, as the outer and AVE values in this study met the threshold recommended by Achmad et al. (2021), all constructs under investigation also met the criteria for convergent validity. Additionally, an assessment of internal consistency in this study was conducted by

Table 2
Measurement model

Constructs	Items	Outer Loadings	Cronbach's Alpha	Composite Reliability	AVE
Subjective Norm	SN3	0.758	0.867	0.904	0.655
	SN4	0.839			
	SN5	0.783			
	SN6	0.883			
	SN7	0.777			
Attitude	ATT2	0.806	0.892	0.915	0.608
	ATT3	0.784			
	ATT4	0.771			
	ATT5	0.843			
	ATT6	0.711			
	ATT7	0.738			
	ATT8	0.798			
Product Knowledge	PK4	0.848	0.853	0.901	0.694
	PK5	0.836			
	PK7	0.826			
	PK8	0.821			
Perceived Behavioral Control	PBC1	0.760	0.919	0.936	0.676
	PBC2	0.753			
	PBC3	0.835			
	PBC4	0.870			
	PBC5	0.855			
	PBC6	0.821			
	PBC7	0.851			
Online Purchase Intention	OPI1	0.835	0.904	0.927	0.680
	OPI2	0.870			
	OPI3	0.867			
	OPI4	0.762			
	OPI5	0.884			
	OPI7	0.718			
Religiosity	RE3	0.774	0.817	0.879	0.645
	RE4	0.816			
	RE5	0.814			
	RE6	0.807			

Note. SN = subjective norm, ATT = attitude, PK = product knowledge, PBC = perceived behavioral control, OPI = online purchase intention, RE = religiosity

Table 3
Discriminant validity testing using (Heterotrait-Monotrait) HTMT

Construct	1	2	3	4	5	6
1. Attitude						
2. Online Purchase Intention	0.713					
3. Perceived Behavioral Control	0.669	0.660				
4. Product Knowledge	0.806	0.510	0.549			
5. Religiosity	0.597	0.528	0.669	0.484		
6. Subjective Norm	0.836	0.702	0.694	0.677	0.616	

analyzing the values of Cronbach's alpha (CA) and composite reliability (CR). High internal consistency shows that items in the construct are strongly linked. The data in Table 2 shows that the values of CA and CR for all constructs in this research were above the proposed value of 0.7, indicating that the items in the construct are consistent.

The evaluation of discriminant validity was conducted by examining the value of the Heterotrait-Monotrait (HTMT). As posited by Avkiran and Ringle (2018), the value of HTMT should not exceed the value of 0.90 to satisfy the requisite conditions of discriminant validity for the measurement model. As evidenced in Table 3, the value of the HTMT for all constructs is below 0.9, indicating that this study does not present any issues pertaining to discriminant validity.

Structural Model

The next assessment for the structural model is the evaluation of multicollinearity. The values of the variance inflation factor (VIF) of all variables (PBC, PK, ATT, SN, RE) in this study were lower than 0.5, which means that there is no multicollinearity issue (Achmad et al., 2021). Subsequently, the

model fit was analyzed by evaluating the value of Standardized Root Mean Square Residual (SRMR; Henseler et al., 2016). The data shows that the SRMS value in this research was 0.086. The value is lower than its threshold of 0.09, which means the model is reasonably fit (Hair et al., 2014).

Assessment of significance for every path proposed in this research is by looking at the p-value and T-value. The direct effect between the independent and dependent variables is significant if the *p*-value is < 0.05 and the T-value is > 1.96. Table 4 shows the outcome that ATT has a substantial positive effect on OPI for women who wore Non-Sharia clothes but no significant effect for Sharia-concerned women. Hence, H1 is supported only by Non-Sharia fashion wearers. It was also found that SN substantially influences OPI for Non-Sharia ones but has no significant effect on Sharia fashion wearers. Thus, H2 is only supported for respondents who are categorized as wearing Non-Sharia clothes. On the other hand, the data from Table 4 show that PBC on OPI and PK on ATT are significant for Sharia and Non-Sharia fashion styles. Therefore, H3 and H4 are supported. In addition, PK does not

Table 4
Hypothesis testing

	Non-Sharia Clothes Wearer					
	Direct Effect	**Path-Coefficient**	**Standard Error**	**T value**	**P value**	**Decision**
H1	ATT→OPI	0.336	0.079	4.252	0.000	Supported
H2	SN→OPI	0.228	0.068	3.367	0.001	Supported
H3	PBC→OPI	0.268	0.070	3.851	0.000	Supported
H4	PK→ATT	0.597	0.040	14.925	0.000	Supported
H5	PK→OPI	-0.068	0.069	0.989	0.323	Not supported
H6	RE→ATT	0,271	0.042	6.454	0.000	Supported
H7	RE→OPI	0.044	0.055	0.806	0.421	Not supported
	Sharia Clothes Wearer					
	Direct Effect	**Path-Coefficient**	**Standard Error**	**T value**	**P value**	**Decision**
H1	ATT→OPI	0.121	0.136	0.889	0.375	Not supported
H2	SN→OPI	0.107	0.114	0.937	0.349	Not supported
H3	PBC→OPI	0.315	0.129	2.446	0.015	Supported
H4	PK→ATT	0.750	0.051	14.726	0.000	Supported
H5	PK→OPI	-0.111	0.107	1.035	0.301	Not supported
H6	RE→ATT	0.088	0.059	1.486	0.138	Not Supported
H7	RE→OPI	0.160	0.085	1.875	0.061	Not supported

Note. SN = subjective norm, ATT = attitude, PK = product knowledge, PBC = perceived behavioral control, OPI = online purchase intention, RE = religiosity

significantly affect OPI, which means that H5 is not supported. Furthermore, RE was found to have a significant positive effect on ATT only from Non-Sharia fashion wearers, which supports H6. RE was also found to have no significant effect on OPI, which does not support H7. Sharia and Non-Sharia have similar responses that do not support H5 and H7.

The other necessary test is evaluating the coefficient of determination (R2) to assess how far the model could explain the construct (Achmad et al., 2021). This research explained 0.561%, or 56.1%, of the ATT construct and 0.514%, or 51.4%, of the OPI construct.

DISCUSSIONS

This study investigates the online purchasing intentions (OPI) determinants of Muslim fashion products among Indonesian women using the Theory of Planned Behavior (TPB) and additional variables, including religiosity and product knowledge. The research revealed a significant effect of attitude (ATT) on OPI. However, it is important to note that the effect was limited to respondents classified as Non-Sharia fashion-style wearers. This finding is consistent with the study conducted by Farid et al. (2023), Folkvord et al. (2021), Kuswati et al. (2021), and Pandey and Yadav (2023).

The respondents who preferred Non-Sharia fashion styles had a positive attitude toward purchasing Shariah-compliant fashion products online. They still wear Non-Sharia fashion styles because wearing them requires more consideration and acceptance from their friends and family (Aruan & Wirdania, 2020). Therefore, they maintain their positive attitude as an implicit desire. In contrast, the respondents who wore a Sharia fashion style show that the relationship between ATT and OPI is insignificant. This means that some external factors affect negative attitudes towards buying Sharia products. Kusumawardani and Purniasari (2021) found that consumers probably need more research on the product's quality and attributes before purchasing the product. As the competitiveness among sharia fashion designers increases, fashion designers tend to create new designs that are more innovative, creative and materialistic. Kusumawati et al. (2020) found that people not inclined toward innovative fashion and materialistic tendencies will refuse to buy Sharia products over the Internet. Consumers' attitudes towards fast-moving goods fluctuate depending on the current trend (Setyawan et al., 2023).

Subsequently, respondents who adhered to the Non-Sharia fashion style demonstrated that subjective norm (SN) influences OPI considerably. It indicates that the purchasing intention of Non-Sharia fashion styles among respondents in Indonesia is still influenced by their social grouping, particularly in relation to friends and family. This finding is also consistent with the results of studies conducted by Hasbullah et al. (2016), Khoa (2023), and Salim et al. (2022), which indicated that SN has a significant effect on OPI. Conversely, respondents who wore Sharia fashion styles demonstrated an insignificant effect between SN and OPI. The findings indicate that the purchasing behavior of Sharia fashion-style respondents in Indonesia is not influenced by their surrounding values or social groupings. Sharia fashion style wearer in Indonesia prioritize their beliefs over community values. This finding is consistent with the research conducted by Kobylińska (2022), which found that SN is not statistically significant on OPI.

However, it was unexpectedly discovered that PBC considerably impacted OPI among respondents who adhere to the Sharia fashion style and those who do not. This finding suggests that Muslim women in Indonesia aspire to fulfill their religious obligations, which include adhering to a Sharia-compliant fashion style. Although, at this time, Non-Sharia respondents wore a fashion style that the Quran did not recommend, they expressed a desire to change this in the future. Furthermore, respondents indicated that they have complete control over their online purchasing intentions regarding Sharia fashion products. Similarly, the relationship between PK and ATT significantly influences Sharia and Non-Sharia respondents, suggesting that the level of consumer understanding regarding product quality shapes the attitude of respondents. The results are consistent with the findings of Tzeng and Ho (2022),

who posited that increasing consumers' knowledge leads to a more positive attitude towards products. This finding suggests that the quality and features of a product influence people's perception of it. In online purchasing, consumer reviews also emerge as a crucial predictor of attitudes in the early stages of purchasing decision-making. Setyawan et al. (2019) found that consumers' trust will also affect the overall business performance. Additionally, women with extensive employment experience tend to possess greater bargaining power in household purchasing decisions (Ang & Lai, 2023).

This study also found that PK has no significant effect on OPI. Sharia and Non-Sharia respondents revealed the same result. It differs from studies conducted by Millatina (2022), Sun and Wang (2020) and Tseng et al. (2022), which stated that consumers' knowledge of a product would have a positive influence on their willingness to purchase. It occurred because Muslim women in Indonesia are very selective when purchasing fashion products online. As online platforms provide review columns, product ratings, and testimonials, consumers tend to be more aware of product quality. Poor quality and unrealistic prices will reinforce people's concern about not purchasing Sharia fashion styles online. Zhu et al. (2020) found that when the review of a product is negative, high-quality online reviews do not affect satisfaction or purchase intention.

The next point of discussion is to analyze the relationship between RE and ATT. This study revealed that RE has a significant relationship with ATT only from Non-Sharia respondents, while Sharia fashion wearers found no significant relationship. The result obtained from Non-Sharia fashion style wearers supports previous findings by Yaakop et al. (2021), who stated that religiosity significantly influences consumer attitudes. This result demonstrates that religiosity may influence the online purchase of fashion products through online platforms. As a rule, as stated in the Quran, Muslim women should wear Sharia fashion style, and their level of religiosity becomes a critical predictor of their behavior. Conversely, Sharia fashion style wearers do not show a positive relationship because their attitudes are not shaped by their beliefs but by the quality of the products and reviews.

In addition, we evaluated whether RE is an effective predictor variable for OPI. However, we found that Sharia and Non-Sharia fashion style wearers found no significant correlation between the two. This result is inconsistent with a previous study conducted by Alotaibi and Abbas (2023) and Kaur et al. (2023), which found that religiosity significantly influences purchase intention. It can be surmised that the level of religiosity could not affect consumers' buying intention on Sharia fashion style in Indonesia. Moreover, other aspects can influence individual purchasing behavior online, such as consumers' trust and account credibility. Indiani et al. (2024) stated that customer trust is crucial to encourage online purchase intention. Online retailers are also essential to ensure that customer expectations are met or exceeded.

CONCLUSION

The Muslim fashion industry is a significant sector in Indonesia, holding considerable potential for boosting economic growth. Although there are many researchers conducted on consumers' OPI toward Muslim women's fashion, to our knowledge, study on Sharia Muslim women's fashion products is so limited that no systematic study on analyzing the Theory of Planned Behavior (TPB) with RE and PK and comparing two different consumers' background has not been done yet. Therefore, we extended the TPB framework by incorporating RE and PK. Structural equation modeling (SEM) was employed to determine the factors that impact consumers' OPI towards sharia-compliant fashion products for women within the Muslim community. Particularly, it was found that Non-Sharia consumers could be converted as Sharia fashion style buyers if they found such fashion style is a new norm for others. Creating colorful products and flexible designs while still within religious standards is necessary.

Besides, women Sharia consumers would not purchase Sharia products because of bad experiences such as low ratings, poor quality, no detailed product explanation, and bad comments. The findings have the potential to assist fashion companies catering to Muslim women in enhancing the quality of their products, implementing fair pricing strategies, and establishing effective marketing campaigns. As per the result of this study, detailed and real information regarding the product also influences Sharia and Non-Sharia consumers to purchase products online.

Managerial Implications

Given that PBC is a considerable predictor of OPI for consumers following Sharia principles, women Muslim fashion companies' advertising content should focus more on product quality. Since the Sharia fashion style is often perceived as old-fashioned, boring (limited color variant), and low quality, women Muslim fashion companies suggested creating more colorful products, excellent quality, and reasonable pricing while still obeying the Quranic guidelines. Once women consumers feel that wearing the Sharia fashion style could also be flexible, fun, trusted quality, and good ratings and reviews, they might be more willing to buy Sharia fashion style products online (Ye et al., 2022). This study also reported that PK has a significant effect on ATT. Therefore, it is necessary to introduce the product quality through real video or live streaming, as it such efforts will enhance companies' sales (Zhou & Tian, 2022).

This study found that SN and PBC are significant on OPI for the Non-Sharia women's fashion styles category. Sharia fashion companies should create advertising content emphasizing being Sharia in terms of fashion style as a norm in today's society, as the willingness to purchase relies on the value of the opinion of people close to them. Moreover, being Sharia-compliant does not mean it should be old-fashioned, but it also can be colorful and fun.

Theoretical Implications

The main theoretical implication of this study lies in the inclusion of PK and RE when analyzing OPI for Sharia products

among Muslim Women. Our results showed that PK and RE were found not to be Non-Sharia significant predictors of OPI for Sharia and Non-Sharia fashion Muslim wearers. When it comes to online, consumers will have limitations in seeing the actual product quality, as the pictures and videos only appear on the digital platform. The study by Zhu et al. (2020) confirmed that negative product reviews on online platforms will reduce consumers' probability of being satisfied and having purchase intention.

Furthermore, to the best of our knowledge, this study is one of the few that addresses the effect of PK and RE on OPI under the Theory of Planned Behavior (TPB) framework. This research also provides a valuable contribution to the theory by comparing two types of respondents, including Muslim women who wore Sharia and Non-Sharia fashion clothes. A study by Aruan and Wirdania (2020) also reported that the level of religiosity corresponds with the type of clothes consumers wear. On the other hand, this research also provides a valuable contribution by extending the Theory of Planned Behavior (TPB) by incorporating PK and RE (Ajzen, 1991; Mortimer et al., 2020; Nurhayati & Hendar, 2020). It also confirmed that TPB is still relevant for predicting the behavior of Muslim women consumers when it comes to Sharia fashion products.

Limitations and Future Research Suggestions

This research has revealed limitations that provide possibilities for future research.

First, this study is limited to investigating unspecific Sharia fashion-style products. Future research encouraged the choice of specific products. Subsequently, the comparison between the products endorsed by fashion experts or influencers and those that did not use advertising efforts can also be explored in future research. Second, this study collected 68 respondents under 20 without parental consent. Although a declaration form states that the data is for research purposes only and includes individual consent, obtaining parental consent from respondents is substantial. Future studies should consider collecting data with individual and parental consent. Lastly, this study only investigated consumers' online purchase intention using the Theory of Planned Behavior (TPB) with additional variables. Future studies may consider other theories, such as stimulus-organism-response (SOR), and marketing mix.

ACKNOWLEDGEMENT

REFERENCES

Achmad, N., Kuswati, R., & Imronudin. (2021). *Teori & praktek statistik milenial* [Theory & practice of millenial statistics]. Jasmine Publisher.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision*

Processes, *50*(2), 179-211. https://doi.org/10.1016/0749-5978(91)90020-T

Ajzen, I. (2005). *Attitudes, personality and behavior* (2nd ed.). Open University Press-McGraw Hill Education.

Akram, U., Ansari, A. R., ulhaq, I., & Yan, C. (2023). Cosmetics makers have always sold 'hope in a jar'! Understanding the cosmetics purchase intention in the Chinese mobile commerce environment. *Journal of Retailing and Consumer Services*, *73*, Article 103337. https://doi.org/10.1016/j.jretconser.2023.103337

Alam, S. S., Mohd, R., & Hisham, B. (2011). Is religiosity an important determinant on Muslim consumer behaviour in Malaysia? *Journal of Islamic Marketing*, *2*(1), 83-96. https://doi.org/10.1108/17590831111115268

Almila, A. (2020). Introduction: Fashion / Religion interfaces. *Religions, 11*(3), Article 133. https://doi.org/10.3390/rel11030133

Alotaibi, A., & Abbas, A. (2023). Islamic religiosity and green purchase intention: A perspective of food selection in millennials. *Journal of Islamic Marketing*, *14*(9), 2323-2342. https://doi.org/10.1108/JIMA-06-2021-0189

Ang, C. W., & Lai, S. L. (2023). Women's empowerment in Malaysia and Indonesia: The autonomy of women in household decision-making. *Pertanika Journal of Social Sciences and Humanities*, *31*(2), 903-916. https://doi.org/10.47836/pjssh.31.2.22

Aruan, D. T. H., & Wirdania, I. (2020). You are what you wear: Examining the multidimensionality of religiosity and its influence on attitudes and intention to buy Muslim fashion clothing. *Journal of Fashion Marketing and Management*, *24*(1), 121-136. https://doi.org/10.1108/JFMM-04-2019-0069

Avkiran, N. K., & Ringle, C. M. (2018). *Partial Least Squares Structural Equation Modeling: Recent Advances in Banking and Finance*. Springer International Publishing. https://doi.org/10.1007/978-3-319-71691-6

Awal, M. R., Hossain, M. S., Arzin, T. A., Sheikh, M. I., & Haque, M. E. (2023). Application of the SOBC model to study customers' online purchase intentions in an emerging economy during COVID-19: Does gender matter? *PSU Research Review*, *8*(2), 553-574 https://doi.org/10.1108/PRR-02-2022-0014

Bukhari, F., Hussain, S., Ahmed, R. R., Streimikiene, D., Soomro, R. H., & Channar, Z. A. (2020). Motives and role of religiosity towards consumer purchase behavior in western imported food products. *Sustainability*, *12*(1), Article 356. https://doi.org/10.3390/su12010356

Cairns, H. M., Ritch, E. L., & Bereziat, C. (2022). Think eco, be eco? The tension between attitudes and behaviours of millennial fashion consumers. *International Journal of Consumer Studies*, *46*(4), 1262-1277. https://doi.org/10.1111/ijcs.12756

Cepeda-Carrion, G., Cegarra-Navarro, J. G., & Cillo, V. (2019). Tips to use partial least squares structural equation modelling (PLS-SEM) in knowledge management. *Journal of Knowledge Management*, *23*(1), 67-89. https://doi.org/10.1108/JKM-05-2018-0322

Clayton, R. R., & Gladden, J. W. (1974). The five dimensions of religiosity: Toward demythologizing a sacred artifact. *Journal for the Scientific Study of Religion, 13*(2), 135-143. https://doi.org/10.2307/1384375

Cornwall, M., Albrecht, S. L., Cunningham, P. H., & Pitcher, B. L. (1986). The dimensions of religiosity: A conceptual model with an empirical test. *Review of Religious Research*, *27*(3), 226-244. https://doi.org/10.2307/3511418

de Jong, G. F., Faulkner, J., & Warland, R. H. (1976). Dimensions of religiosity reconsidered; evidence from a cross-cultural study. *Social Forces*, *54*(4), 866-889. https://doi.org/10.1093/sf/54.4.866

Delener, N. (1990). The effects of religious factors on perceived risk in durable goods purchase decisions. *Journal of Consumer Marketing*, *7*(3), 27-38. https://doi.org/10.1108/EUM0000000002580

Efremov, J., Kertakova, M., & Dimitrijeva-Kuzmanovska, V. (2021). Expression of personality through dressing. *Tekstilna Industrija*, *69*(1), 28-35. https://doi.org/10.5937/tekstind2101028E

Farid, M. S., Cavicchi, A., Rahman, M. M., Barua, S., Ethen, D. Z., Happy, F. A., Rasheduzzaman, M., Sharma, D., & Alam, M. J. (2023). Assessment of marketing mix associated with consumer's purchase intention of dairy products in Bangladesh: Application of an extended theory of planned behavior. *Heliyon*, *9*(6), Article e16657. https://doi.org/10.1016/j.heliyon.2023.e16657

Fishbein, M., & Ajzen, I. (2005). Theory-based behavior change interventions: Comments on Hobbis and Sutton. *Journal of Health Psychology*, *10*(1), 27-31. https://doi.org/10.1177/1359105305048552

Folkvord, F., Bergmans, N., & Pabian, S. (2021). The effect of the nutri-score label on consumer's attitudes, taste perception and purchase intention: An experimental pilot study. *Food Quality and Preference*, *94*, Article 104303. https://doi.org/10.1016/j.foodqual.2021.104303

Garson, G. D. (2016). *Partial Least squares: Regression and Structural Equation Models*. Statistical Associates Publishing.

Ghozali, I. (2017). *Model Persamaan Struktural Konsep Dan Aplikasi Program AMOS 24* [Structural Equation Modeling Concepts and Applications AMOS 24 Program]. Badan Penerbit Universitas Diponegoro.

Glock, C. Y. (1962). On the study of religious commitment. *Religious Education*, *57*(Sup. 4), 98-110. https://doi.org/10.1080/003440862057S407

Govaerts, F., & Olsen, S. O. (2023). Consumers' values, attitudes and behaviours towards consuming seaweed food products: The effects of perceived naturalness, uniqueness, and behavioural control. *Food Research International*, *165*, Article 112417. https://doi.org/10.1016/j.foodres.2022.112417

Gunawan, I., Redi, A. A. N. P., Santosa, A. A., Maghfiroh, M. F. N., Pandyaswargo, A. H., & Kurniawan, A. C. (2022). Determinants of customer intentions to use electric vehicle in Indonesia: An integrated model analysis. *Sustainability*, *14*(4), Article 1972. https://doi.org/10.3390/su14041972

Gundala, R. R., Nawaz, N., R M, H., Boobalan, K., & Gajenderan, V. K. (2022). Does gender moderate the purchase intention of organic foods? Theory of reasoned action. *Heliyon*, *8*(9), Article e10478. https://doi.org/10.1016/j.heliyon.2022.e10478

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2014). *Multivariate data analysis* (7th ed). Pearson.

Hasbullah, N. A., Osman, A., Abdullah, S., Salahuddin, S. N., Ramlee, N. F., & Soha, H. M. (2016). The relationship of attitude, subjective norm and website usability on consumer intention to purchase online: An evidence of Malaysian youth. *Procedia Economics and Finance*, *35*, 493-502. https://doi.org/10.1016/s2212-5671(16)00061-7

Hasyim, F. (2022). Adoption of extended theory of planned behavior to halal food purchasing decision admist pandemic. *Journal of Islamic Economic Laws*, *5*(1), 84-115. https://doi.org/10.23917/jisel.v5i1.15162

Henseler, J., Hubona, G., & Ray, P. A. (2016). Using PLS path modeling in new technology research: Updated guidelines. *Industrial Management and Data Systems*, *116*(1), 2-20. https://doi.org/10.1108/IMDS-09-2015-0382

Indiani, N. L. P., Amerta, I. M. S., & Sentosa, I. (2024). Exploring the moderation effect of consumers' demography in the online purchase behavior. *Cogent Business and Management*, *11*(1), Article 2393742. https://doi.org/10.1080/23311975.2024.2393742

Islam, M. A., Saidin, Z. H., Ayub, M. A., & Islam, M. S. (2022). Modelling behavioural intention to buy apartments in Bangladesh: An extended theory of planned behaviour (TPB). *Heliyon*, *8*(9), Article e10519. https://doi.org/10.1016/j.heliyon.2022.e10519

Kamarulzaman, Z., & Shaari, N. (2020). A comparison framework on Islamic dress code and modest

fashion in the Malaysian fashion industry. *Journal of Archaeology of Egypt/Egyptology*, *17*(7), 7063-7072.

Kaur, J., Bhardwaj, N., Fernandes, R., Vidya, V., & Farooqui, N. A. (2023). A meta-analytical study on the role of religiosity on purchase intention in the theory of planned behavior. *Journal of Islamic Marketing*, *14*(11), 2845-2870. https://doi.org/10.1108/JIMA-09-2021-0304

Kazaure, M. A., Abdullah, A. R., Jantan, A. H., & Zawawi, D. B. (2020). Influences of TPB variable on SMEs intention to adopt online crowdfunding services in Nigeria. *International Journal of Advanced Science and Technology*, *29*(4 Special Issue), 981-993.

Khan, M. N., & Kirmani, M. D. (2018). Role of religiosity in purchase of green products by Muslim students: Empirical evidences from India. *Journal of Islamic Marketing*, *9*(3), 504-526. https://doi.org/10.1108/JIMA-04-2017-0036

Khoa, B. T. (2023). The role of self-efficacy and firm size in the online advertising services continuous adoption intention: Theory of planned behavior approach. *Journal of Open Innovation: Technology, Market, and Complexity*, *9*(1), Article 100025. https://doi.org/10.1016/j.joitmc.2023.100025

Kobylińska, U. (2022). Attitudes, subjective norms, and perceived control versus contextual factors influencing the entrepreneurial intentions of students from Poland. *WSEAS Transactions on Business and Economics*, *19*, 94-106. https://doi.org/10.37394/23207.2022.19.10

Kotler, P., & Keller, L. (2016). *Marketing Management* (15th ed.). Pearson.

Kraiwanit, T., Jangjarat, K., & Srijam, A. (2023). Factors determining online activities and technology use among older adults in Thailand. *Pertanika Journal of Social Sciences and Humanities*, *31*(2), 803-816. https://doi.org/10.47836/pjssh.31.2.17

Kusumawardani, K., & Purniasari, P. (2021). The effect of online consumer interaction and shopping motivation on purchase intention. *FIRM Journal of Management Studies*, *6*(2), 183-202. https://doi.org/10.33021/firm.v6i2.1555

Kusumawati, A., Listyorini, S., Suharyono, & Yulianto, E. (2019). The impact of religiosity on fashion knowledge, consumer-perceived value and patronage intention. *Research Journal of Textile and Apparel*, *23*(4), 269-290. https://doi.org/10.1108/RJTA-04-2019-0014

Kusumawati, A., Listyorini, S., Suharyono, & Yulianto, E. (2020). The role of religiosity on fashion store patronage intention of muslim consumers in Indonesia. *SAGE Open*, *10*(2). https://doi.org/10.1177/2158244020927035

Kuswati, R., Purwanto, B. M., Sutikno, B., & Aritejo, B. A. (2021). Pro-environmental self-identity: Scale purification in the context of sustainable consumption behavior. In M. H. Bilgin, H. Danis, & E. Demir (Eds), *Eurasian Business and Economics Perspectives. Eurasian Studies in Business and Economics* (Vol. 17, pp. 173-185). Springer, Cham. https://doi.org/10.1007/978-3-030-65147-3_12

Lee, S. H. N., & Chow, P. S. (2020). Investigating consumer attitudes and intentions toward online fashion renting retailing. *Journal of Retailing and Consumer Services*, *52*, Article 101892. https://doi.org/10.1016/j.jretconser.2019.101892

Li, L. Q., Bui, Q. N., & Yan, H. (2025). The impact of COVID-19 information overload on Vietnamese consumers' online purchase intention. *International Journal of Emerging Markets, 20*(4),1728-1751. https://doi.org/10.1108/IJOEM-05-2022-0860

Lu, B., & Chen, Z. (2021). Live streaming commerce and consumers' purchase intention: An uncertainty reduction perspective. *Information and Management*, *58*(7), Article 103509. https://doi.org/10.1016/j.im.2021.103509

Ma, J., Hong, J. H., Yoo, B., & Yang, J. (2021). The effect of religious commitment and global identity on purchase intention of luxury fashion products: A cross-cultural study. *Journal of Business Research*, *137*, 244-254. https://doi.org/10.1016/j.jbusres.2021.08.040

Maran, T., Liegl, S., Moder, S., Kraus, S., & Furtner, M. (2021). Corrigendum to "Clothes make the leader! How leaders can use attire to impact followers' perceptions of charisma and approval" [J. Bus. Res. 124 (2021) 86–99]. *Journal of Business Research*, *127*, 382-383. https://doi.org/10.1016/j.jbusres.2021.01.020

Millatina, A. N. (2022). The impact of halal label in food buying decisions. *Journal of Islamic Economic Laws*, *5*(1), 159-176. https://doi.org/10.23917/jisel.v5i1.17139

Mortimer, G., Fazal-e-Hasan, S. M., Grimmer, M., & Grimmer, L. (2020). Explaining the impact of consumer religiosity, perceived risk and moral potency on purchase intentions. *Journal of Retailing and Consumer Services*, *55*, Article 102115. https://doi.org/10.1016/j.jretconser.2020.102115

Muadzin, F., & Lenggogeni, S. (2021). The role of brand awareness in mediating the effect of message appeals in media advertising on purchase intention. *Benefit: Jurnal Manajemen Dan Bisnis*, *6*(1), 13-24.

Najib, M. F., Kusdiana, W., & Razli, I. A. (2022). Local Halal cosmetic products purchase intention: Knowledge, religiosity, attitude, and Islamic advertising factors. *Journal of Islamic Economic Laws*, *5*(2), 177-198. https://doi.org/10.23917/jisel.v5i2.19199

Nickerson, C., Georgiadou, E., & Nandialath, A. M. (2023). Religious affiliation and religiosity: do Islamic appeals in advertising lead to higher purchase intentions among Muslim consumers in Dubai? *Journal of Islamic Marketing*, *14*(4), 1128-1145. https://doi.org/10.1108/JIMA-10-2021-0332

Nurhayati, T., & Hendar, H. (2020). Personal intrinsic religiosity and product knowledge on halal product purchase intention: Role of halal product awareness. *Journal of Islamic Economic Laws*, *11*(3), 603-620. https://doi.org/10.1108/JIMA-11-2018-0220

Pandey, M., & Yadav, P. S. (2023). Understanding the role of individual concerns, attitude, and perceived value in green apparel purchase intention; the mediating effect of consumer involvement and moderating role of generation Z&Y. *Cleaner and Responsible Consumption*, *9*, Article 100120. https://doi.org/10.1016/j.clrc.2023.100120

Peña-García, N., Gil-Saura, I., Rodríguez-Orejuela, A., & Siqueira-Junior, J. R. (2020). Purchase intention and purchase behavior online: A cross-cultural approach. *Heliyon*, *6*(6), Article e04284. https://doi.org/10.1016/j.heliyon.2020.e04284

Peng, D. X., & Lai, F. (2012). Using partial least squares in operations management research: A practical guideline and summary of past research. *Journal of Operations Management*, *30*(6), 467-480. https://doi.org/10.1016/j.jom.2012.06.002

Peter, J. P., & Olson, J. C. (2016). *Perilaku konsumen dan strategi pemasaran* [Consumer behavior and marketing strategy]. Salemba Empat.

Pew Research Center. (2015, April 2). *The Future of World Religions: Population Growth Projections, 2010-2050*. https://www.pewresearch.org/religion/2015/04/02/religious-projections-2010-2050/

Rahman, M., Albaity, M., & Maruf, B. (2017). The role of religiosity on the relationship between materialism and fashion clothing consumption among Malaysian Generation Y consumers. *Social Indicators Research*, *132*, 757-783. https://doi.org/10.1007/s11205-016-1310-9

Rakib, M. A. N., Chang, H. J. J., & Jones, R. P. (2022). Effective sustainability messages triggering consumer emotion and action: An application of the social cognitive theory and the dual-process model. *Sustainability*, *14*(5), Article 2505. https://doi.org/10.3390/su14052505

Ratnasari, R. T., Prajasari, A. C., & Kassim, S. (2023). Does religious knowledge level affect brand association and purchase intention of luxury cars? Case of the Lexus cars in Indonesia. *Journal of Islamic Marketing*, *14*(4), 988-1006. https://doi.org/10.1108/JIMA-01-2020-0004

Ratnasari, R. T., Ula, U. F., & Sukmana, R. (2021). Can store image moderate the influence of religiosity level on shopping orientation and customers'

behavior in Indonesia? *Journal of Islamic Accounting and Business Research*, *12*(1), 78-96. https://doi.org/10.1108/JIABR-01-2017-0006

Rausch, T. M., & Kopplin, C. S. (2021). Bridge the gap: Consumers' purchase intention and behavior regarding sustainable clothing. *Journal of Cleaner Production*, *278*, Article 123882. https://doi.org/10.1016/j.jclepro.2020.123882

Salim, M., Aprianto, R., Abu Bakar, S. A., & Rusdi, M. (2022). Muslim clothing online purchases in Indonesia during COVID-19 crisis. *Economies*, *10*(1), Article 19. https://doi.org/10.3390/economies10010019

Setyawan, A. A., Maulana, H., Kusumawati, P. D. W., Murwanti, S., & Saputro, E. P. (2023). Is this truly healthy? Consumer's trust in a healthy product extension in traditionally unhealthy products. *WSEAS Transactions on Business and Economics*, *20*, 752-758. https://doi.org/10.37394/23207.2023.20.69

Setyawan, A., Susila, I., & Anindita, S. (2019). Influence of power asymmetry, commitment and trust on sme retailers' performance. *Business: Theory and Practice*, *20*, 216-223. https://doi.org/10.3846/btp.2019.21

Shirazi, F., Adam, N. A., Shanmugam, M., & Schultz, C. D. (2021). The importance of trust for electronic commerce satisfaction: An entrepreneurial perspective. *British Food Journal*, *123*(2), 789-802. https://doi.org/10.1108/BFJ-07-2020-0626

Silalahi, S. A. F., Fachrurazi, F., & Fahham, A. M. (2021). The role of perceived religiosity in strengthening celebrity endorser's credibility dimensions. *Cogent Business and Management*, *8*(1), Article 1956066. https://doi.org/10.1080/23311975.2021.1956066

Singh, A., Rana, N. P., & Parayitam, S. (2022). Role of social currency in customer experience and co-creation intention in online travel agencies: Moderation of attitude and subjective norms. *International Journal of Information Management Data Insights*, *2*(2), Article 100114. https://doi.org/10.1016/j.jjimei.2022.100114

State of The Global Islamic Economy Report 2020/21: Thriving in Uncertainty. (2020). DinarStandard. https://cdn.salaamgateway.com/reports/pdf/862e1c9a9d925c5cd6aacae31b0ea102e21778a9.pdf

Stirling, K. C. (2024, March 28). *5 facts about Muslims and Christians in Indonesia.* Pew Research Center. https://www.pewresearch.org/short-reads/2024/03/28/5-facts-about-muslims-and-christians-in-indonesia/

Stolovy, T. (2021). Styling the self: Clothing practices, personality traits, and body image among Israeli women. *Frontiers in Psychology*, *12*, Article 719318. https://doi.org/10.3389/fpsyg.2021.719318

Sun, Y., & Wang, S. (2020). Understanding consumers' intentions to purchase green products in the social media marketing context. *Asia Pacific Journal of Marketing and Logistics*, *32*(4), 860-878. https://doi.org/10.1108/APJML-03-2019-0178

Tennakoon, N., & Lasanthika, J. (2018). Religiosity and engagement: Clarifying the relationship. *International Journal of Commerce and Management Research*, *4*(1), 52-57.

The Quran. (2015). The Quran and Its Translation: Surah An-Nur verse 31. Lajnah Pentashihan Mushaf Al-Quran.

Tseng, T. H., Lee, C. T., Huang, H.-T., & Yang, W. H. (2022). Success factors driving consumer reuse intention of mobile shopping application channel. *International Journal of Retail & Distribution Management*, *50*(1), 76-99. https://doi.org/https://doi.org/10.1108/IJRDM-08-2020-0309

Tzeng, S. Y., & Ho, T. Y. (2022). Exploring the effects of product knowledge, trust, and distrust in the health belief model to predict attitude toward dietary supplements. *SAGE Open*, *12*(1). https://doi.org/10.1177/21582440211068855

Ustaahmetoğlu, E. (2020). The influence of different advertisement messages and levels of religiosity on attitude and purchase intention. *International Journal of Islamic and Middle Eastern Finance and Management*, *13*(2), 339-356. https://doi.org/10.1108/IMEFM-02-2019-0064

Uthamaputhran, L., Ahmad, F., Hassan, H., & Jaganathan, M. (2021). Dataset on the influence TPB predictors on environmental responsive behaviour amongst head teachers in the northern region of Malaysia. *Data in Brief*, *35*, Article 106815. https://doi.org/10.1016/j.dib.2021.106815

Uzir, M. U. H., Bukari, Z., Al Halbusi, H., Lim, R., Wahab, S. N., Rasul, T., Thurasamy, R., Jerin, I., Chowdhury, M. R. K., Tarofder, A. K., Yaakop, A. Y., Hamid, A. B. A., Haque, A., Rauf, A., & Eneizan, B. (2023). Applied artificial intelligence: Acceptance-intention-purchase and satisfaction on smartwatch usage in a Ghanaian context. *Heliyon*, *9*(8), Article e18666. https://doi.org/10.1016/j.heliyon.2023.e18666

Wang, L., & Zhang, Q. (2021). The role of extrinsic religiosity on consumer green hotel selection in Title must be long View project Consumer green purchase behaviour/green decision-making process View project. *International Journal of Tourism & Hotel Business Management*, *3*(1), 405-425.

Wang, L., Wong, P. P. W., & Elangkovan, N. A. (2020). The influence of religiosity on consumer's green purchase intention towards green hotel selection in China. *Journal of China Tourism Research*, *16*(3), 319-345. https://doi.org/10.1080/19388160.2019.1637318

Wardana, C. K., & Widowati, R. (2021). The influence of product knowledge and religious norms on consumer purchase intention mediated by attitude. *Proceedings of the 4th International Conference on Sustainable Innovation 2020-Accounting and Management (ICoSIAMS 2020)*, *176*(ICoSIAMS 2020), 376-381. https://doi.org/10.2991/aer.k.210121.053

Watakakosol, R., Suttiwan, P., Ngamake, S. T., Raveepatarakul, J., Wiwattanapantuwong, J., Iamsupasit, S., & Tuicomepee, A. (2021). Integration of the theory of planned behavior and transtheoretical model of change for prediction of intentions to reduce or stop alcohol use among Thai adolescents. *Substance Use and Misuse*, *56*(1), 72-80. https://doi.org/10.1080/10826084.2020.1837168

Yaakop, A. Y., Hafeez, H. M., Faisal, M. M., Munir, M., & Ali, M. (2021). Impact of religiosity on purchase intentions towards counterfeit products: Investigating the mediating role of attitude and moderating role of hedonic benefits. *Heliyon*, *7*(2), Article e06026. https://doi.org/10.1016/j.heliyon.2021.e06026

Ye, D., Liu, F., Cho, D., & Jia, Z. (2022). Investigating switching intention of e-commerce live streaming users. *Heliyon*, *8*(10), Article e11145. https://doi.org/10.1016/j.heliyon.2022.e11145

Zhao, L., Lee, S. H., & Copeland, L. R. (2019). Social media and Chinese consumers' environmentally sustainable apparel purchase intentions. *Asia Pacific Journal of Marketing and Logistics*, *31*(4), 855-874. https://doi.org/10.1108/APJML-08-2017-0183

Zhou, X., & Tian, X. (2022). Impact of live streamer characteristics and customer response on live-streaming performance: Empirical evidence from e-commerce platform. *Procedia Computer Science*, *214*, 1277-1284. https://doi.org/10.1016/j.procs.2022.11.306

Zhu, L., Li, H., Wang, F. K., He, W., & Tian, Z. (2020). How online reviews affect purchase intention: a new model based on the stimulus-organism-response (S-O-R) framework. *Aslib Journal of Information Management*, *72*(4), 463-488. https://doi.org/10.1108/AJIM-11-2019-0308

SOCIAL SCIENCES & HUMANITIES

Barriers and Facilitators to Malaysian Teachers' Mental Health Literacy: A Study on Teachers' Experiences

Farah Nadhirah Chairil Anwar* and Jasmine Anak Jain

School of Education, Faculty of Social Sciences and Leisure Management, Taylor's University, 47500 Subang Jaya, Selangor, Malaysia

ABSTRACT

This paper investigates the issue of underdeveloped mental health literacy amongst Malaysian teachers, a problematic phenomenon that leads to a school's inability to successfully address student mental health issues. When untreated, student mental illness can manifest in aggressive or disruptive behaviours that create an unsafe educational environment. This paper explores five Malaysian teachers' experiences of the external factors that facilitate and hinder them from developing their mental health literacy to examine the issue of underdeveloped teacher mental health literacy. The authors employed a qualitative design where data from semi-structured interviews were analysed thematically and found eleven factors—four facilitators and seven barriers—that influence the development of teachers' mental health literacy. The four facilitators identified were school counsellors, supportive colleagues, inclusion of mental health topics in the curriculum, and Ministry of Education programmes on teacher mental health. The seven barriers identified were superstitions, societal disbelief in mental illness, unhelpful admin staff, the ignorance of older colleagues, dismissive parents, teachers' overwhelming workload, and teachers' lack of time. The findings suggested that developing teacher mental health literacy is possible with the necessary support and a whole-school approach. They also imply the integral role all members of the learning community play in developing teacher MHL. Future studies can expand upon the findings by examining the factors that influence the MHL development of the other members of the school community. The small sample size and narrow participant requirements limit this study's scope.

Keywords: Malaysia, mental health literacy, student mental health, teacher mental health

INTRODUCTION

Mental health literacy (MHL) comprises knowledge of and attitudes towards mental illnesses and methods to support those who struggle with mental illnesses (Furnham & Swami, 2018). Similar to other literacies, MHL requires development to

be effective, and this paper aims to explore five Malaysian teachers' experiences of the external facilitators and barriers to their MHL development. While a handful of studies have examined teacher MHL in Malaysia, none have qualitatively analysed the external barriers and facilitators to Malaysian teachers developing their MHL, thus creating a research gap this study aims to fill (Munawar et al., 2021; Phoa et al., 2022, 2023; Tay et al., 2019). These external facilitators and barriers warrant exploration because of how crucial it is for teachers to be mental health literate. MHL decreases stigma, promotes early identification of and intervention for those suffering from mental illnesses, and empowers people to obtain mental health care when they require it (Beukema et al., 2022; Dias et al., 2018; Furnham & Swami, 2018; Miller et al., 2019). Strong MHL is especially crucial for teachers to possess since teachers frequently interact with youths, a population prone to mental illness and, therefore, in need of access to mental health interventions (Ohrt et al., 2020; Yamaguchi et al., 2019). Teachers can carry out these interventions, necessitating developed teacher MHL and this study.

This study aims to identify the external barriers and facilitators to the development of Malaysian teachers' MHL. By providing a deeper understanding of these factors, this study hopes to inform effective teacher MHL-developing measures and thus contribute to building a more inclusive, welcoming, and liveable learning community for mentally ill youths.

The research questions guiding this study are:

1. From their experience, what external factors facilitate Malaysian teachers in developing their mental health literacy?

2. In their experience, what external factors act as barriers to Malaysian teachers' developing mental health literacy?

LITERATURE REVIEW

Mental Health Literacy

Jorm et al. (1997) first coined the term 'mental health literacy' and defined it as

> knowledge and beliefs about mental disorders that aid in their recognition, management, or prevention... including the ability to recognise specific disorders, knowing how to seek mental health information; knowledge of risk factors and causes, self-treatments, and professional help available; and attitudes that promote recognition and appropriate help-seeking. (p. 166)

In 2015, this definition was refined to read "understanding how to obtain and maintain positive mental health; understanding mental disorders and their treatments; decreasing stigma related to mental disorders; and enhancing help-seeking efficacy" (Kutcher et al., 2015, p. 235). This refined definition differs from the previous one in its inclusion of the concept of stigma, which has often been considered separately (Kutcher et al., 2016). It also neatly divides the construct of mental health

literacy into three components: mental health knowledge, attitudes or stigma, and help-seeking efficacies (Kutcher et al., 2016). By 'help-seeking efficacies,' Kutcher et al. (2016) meant the knowledge of when and where to seek mental health support and developing the skills to improve one's mental health care. This study will use the 2015 definition of MHL moving forward as it tackles the issue of mental health awareness holistically.

Theoretical Foundation

This study is grounded in the theory of mental health literacy. As a relatively new area of knowledge, researchers debate whether mental health literacy is a multidimensional construct or a theory; this paper will apply mental health literacy as a theory (Jorm et al., 1997; Spiker & Hammer, 2018).

Before applying MHL as a theory, it is first necessary to understand how it is not a construct, which is what it has been previously understood as (Jorm et al., 1997). A construct is a clear, concise expression of a concept intended for 'strict empirical testing' that can be defined the same way across different studies (Spiker & Hammer, 2018, p. 2). Its precision is essential to its functionality because defining a construct too broadly will lead to it losing its meaningfulness (Wacker, 2004). Mental health literacy cannot be a construct due to its expanding definition (Spiker & Hammer, 2018). As mentioned earlier, constructs are clear, universal, and measured the same way across different studies. The same cannot be said for mental health literacy, for which

there has been disagreement as to how to define and measure thus far (Spiker & Hammer, 2018).

Spiker and Hammer (2018) put forth that MHL should be considered a theory of literacy because it would push for clearer definitions and better measurement of its components. Considering MHL as a theory also keeps its components (e.g. mental health knowledge, attitudes, stigma, and help-seeking efficacy) separate so that the links between them can be found, which can improve the overall effectiveness of MHL interventions (Spiker & Hammer, 2018). In other words, understanding mental health literacy as a theory enables researchers to provide recommendations for practitioners and policy (Beasley et al., 2024). When combined with this paper's aim of identifying the factors which influence the development of teacher MHL, conceptualising MHL as a theory can inform more targeted interventions. Such interventions specifically address individual components of teacher MHL.

Previous Research on MHL Development Factors

While many studies have assessed MHL levels in various samples, only a handful of studies have examined the factors that influence these MHL levels. Internal MHL development factors, or factors that occur at the individual level, that have been identified in previous studies include experience with mental illness, personality, attitudes towards seeking mental health services, gender, and age (Abdelsalam &

Said, 2022; Lauber et al., 2003; Lee et al., 2010; Mendenhall & Frauenholtz, 2013; Piper et al., 2018). It is worth noting that these factors were identified in a wide variety of populations and contexts, namely Swiss adults, Southeast Asian refugees in the US, medical students, and parents of children diagnosed with mood disorders.

This study contributes to growing research by examining external factors that affect MHL development in another specific demographic: young female Malaysian public school teachers, a population whose MHL development has been sidelined in previous research. According to the most relevant studies, school-based MHL development programmes can significantly improve teachers' MHL development. These studies investigated the impact of such programmes on teachers in Canada, Australia, Japan, Cambodia, and Vietnam (Bowyer et al., 2023; Nguyen et al., 2020; Woloshyn & Savage, 2018; Yamaguchi et al., 2021). In view of this, further research that investigates niche populations such as the one conducted here is necessary as it may uncover other influencing factors that have yet to be identified.

Previous Research on Underdeveloped Teacher MHL in Malaysia

Similar to the factors that influence MHL, underdeveloped teacher MHL has been previously researched. In Vietnam and Cambodia, researchers noted underdeveloped teacher MHL and examined the effectiveness of school-based MHL development programmes on teachers

(Nguyen et al., 2020). A similar study was also conducted in Malaysia, whereby the effectiveness of an MHL programme for refugee teachers was analysed (Tay et al., 2019).

Two other studies have investigated underdeveloped teacher MHL within the Malaysian educational context. Phoa et al. (2022) assessed the suicide literacy and MHL of adolescents' parents, guardians, and teachers. A later study by Phoa et al. (2023) investigated parents, teachers, and guardians' MHL predictors. None of the aforementioned studies qualitatively looked at barriers and facilitators to Malaysian teachers developing their MHL, hence warranting a study exploring these factors.

METHODOLOGY

Participants of the Study

This study used purposive sampling to recruit five Malaysian public school teachers as participants to identify the external facilitators and barriers that influence the development of their MHL. The study solely focused on public school teachers to provide Malaysian educational policymakers with insights into the effectiveness of their existing mental health programmes for teachers.

Beyond school type, internal variables such as gender, age, and level of education were also accounted for while recruiting, as these predictors have been shown to influence people's MHL development (Jafari et al., 2021; Piper et al., 2018). Because prior research has shown that females have higher MHL, this study solely recruited

female participants to ensure that the gender variable was controlled (Hadjimina & Furnham, 2017; Mendenhall & Frauenholtz, 2013). Similarly, because previous studies have found age to influence participants' MHL development, only participants under 60 years old were recruited (Piper et al., 2018). Finally, Jafari et al. (2021) found that academic education level influences MHL development. Therefore, this study only recruited people of the same educational level, namely those with a bachelor's degree.

Research Instruments

The researcher conducted one-on-one, online, and semi-structured interviews to collect data for three reasons. First, they allowed the researcher to interject when necessary to clarify the question or topic at hand to yield appropriate responses from the interviewee (Adhabi & Anozie, 2017). Secondly, one-on-one semi-structured interviews allowed the researcher to go deeper into sensitive topics (Adhabi & Anozie, 2017; Elhami & Khoshnevisan, 2022; Md Nor et al., 2023). Thirdly, while semi-structured interviews can be time-consuming when trying to extract rich data, they are well-suited for small-scale research (Pathak & Intratat, 2012). The interviews were conducted and recorded using the videoconferencing service Zoom for its affordability, flexibility in scheduling, familiarity, and rapport-building capabilities (Adhabi & Anozie, 2017; Archibald et al., 2019). Each interview took approximately an hour, depending on the brevity of the participants' responses.

The researcher ensured ethical data collection by providing participants with a participation information sheet and a consent form. The information sheet included the following in simple, layman-friendly English: a description of the research aims and objectives, a description of potential risks, a description of expected benefits, an explanation of confidentiality and anonymity of participants, an explanation of their rights including the fact that participation is voluntary, and a statement saying that the interviews will be recorded for transcription but that recordings will be kept safely and destroyed once the researcher no longer needs them (Arifin, 2018; Khalil et al., 2021). This information sheet was supplemented with a consent form that stated that participants understood the purpose of the interviews and overall research, had the legal capacity to consent, were not coerced into participating, and understood that they could withdraw from the research at any point without facing any consequences (Allmark et al., 2009; Arifin, 2018; Brosnan & Flynn, 2017).

To ensure that this study's findings were rigorous, valid, and reliable, the researcher undertook double-coding and analytical triangulation by using thematic analysis, document analysis, and member checking (Leech & Onwuegbuzie, 2007; Natow, 2020). Additionally, the researcher validated the instrument by seeking expert validation. Double-coding ensured consistency in the analysis of the findings (Beresford et al., 2022). Triangulating the analytical methods enhanced validity by checking any biases

arising from using only one analytical method (Natow, 2020). Since reliability is a byproduct of validity in qualitative research such as the one being conducted here, it was improved in tandem with validity (Golafshani, 2003).

Procedures of Data Collection

First, the researcher had the semi-structured interview guide reviewed by experts and tested in a pilot study to ensure appropriateness and comprehensibility. Then, the researcher distributed a demographics questionnaire throughout the teacher network. After selecting five participants based on the criteria, the researcher acquired consent, set virtual interview dates, and sent the participants a soft copy of the interview questions. On the agreed-upon dates, the researcher used the interview guide to interview the participants. After each call ended, the researcher wrote a brief reflection on the interview. This not only enabled the researcher to ponder on the contents of the interview but also allowed the researcher to identify potential biases and

their influence on both the interviewee and the interview itself (Roberts, 2020). Then, the researcher transcribed the interview using the Zoom audio recording and the 'transcribe' feature on Microsoft Word.

Upon completion of the interview, the researcher reached out to the participants to request relevant documents for document analysis. The document analysis focused on ensuring the credibility of the interviews' content and triangulating the findings (Bowen, 2009; Morgan, 2021). Due to limited participant access, only two documents were analysed: a secondary two Health textbook and a student's anti-bullying project. Both were analysed to identify the mental health topics covered in the school curriculum.

Data Analysis

This paper used Braun and Clarke's (2006) six-phase approach for thematic analysis, as demonstrated in Table 1. It is worth noting that the six phases are recursive; they were not done sequentially but rather repeatedly as the data revealed patterns.

Table 1
The way this study carried out the six phases of thematic analysis

Braun and Clarke (2006) phase	The way this study carried out the Braun and Clarke (2006) phase
Familiarise yourself with the data	The researcher read and re-read all the interview transcripts, noting initial ideas or patterns noticed.
Generate initial codes	Using the qualitative analysis software Quirkos, the researcher coded all the transcripts by assigning a colour for each identified code and highlighting the lines in the transcripts which align with that code. While working through the transcripts, the researcher generated new codes and modified existing ones as needed.
Search for themes	The researcher then grouped the codes into themes and gathered all relevant data into each theme.

Table 1 *(continue)*

Braun and Clarke (2006) phase	The way this study carried out the Braun and Clarke (2006) phase
Review themes	The researcher ensured that the themes were compatible with the coded extracts by reviewing them to determine whether they fit the theme. If they did not, the researcher examined the theme to consider whether the extracts were problematic or out of place. If the extracts were out of place, they were either discarded from analysis, moved into a different theme, or put into a new theme entirely. The researcher then verified that the themes were applied to the entire dataset. To do this, the researcher read the entire data set again, allowing the researcher to code additional data initially overlooked in the themes. Throughout the theme review, the researcher used Maguire and Delahunt's (2017) list of theme review questions to ensure the themes were clear and identifiable. The questions were: 1. Are the themes coherent? 2. Are the themes distinct from one another? 3. Do the themes make sense? 4. Does the data support the themes? 5. Am I trying to fit too much into a theme? 6. If themes overlap, are they really separate themes? 7. Are there themes within themes (subthemes)? 8. Are there other themes within the data?
Define and name themes* *This phase will take place after the document analysis	In this phase, the researcher generated clear names and definitions for each theme by returning to the data extracts and organising them into a narrative. The narratives were not mere paraphrases of the dataset; they defined the elements of interest and why. The narrative also had to fit into the larger overall narrative of the dataset, and both narratives—the thematic one and the overall dataset narrative—had to answer the research questions. To test the clarity of the final themes, the researcher attempted to describe the scope and content of each theme in three sentences. If the researcher could not do so, she refined the theme again.
Produce the report* *This phase will take place after the document analysis	The researcher wrote an organised, coherent, concise, non-repetitive, and logical account of the data's narrative that incorporated all the themes. This report had sufficient data to support all the themes as well as the overall narrative of the dataset. It also put forth an argument that answered the research questions.

Source: Braun & Clarke (2006), Maguire & Delahunt (2017), and author's work

Following the thematic analysis of the interview transcripts, the researcher conducted a thematic analysis of the collected documents to minimise bias and corroborate and validate the findings of the transcript analysis (Bowen, 2009; Morgan, 2021). The documents were first assessed for authenticity by checking for obvious errors

and inconsistencies in content, typography, handwriting, and language style (Bowen, 2009; Morgan, 2021). Then, the researcher examined the documents' credibility by inspecting the documents' producers to ensure that the perspectives they shared in the documents were only motivated by a desire to express the full truth (Flick, 2018). Lastly, the documents were evaluated for representativeness by comparing them to similar documents to confirm that the analysed document was typical (Bowen, 2009).

The researcher then produced a report and completed member checking for analytical triangulation to ensure the accuracy of the dataset narratives (Candela, 2019; Carlson, 2010).

FINDINGS AND DISCUSSION

Facilitators to Teachers' MHL Development

The findings answer the first research question, 'From their experience, what external factors facilitate Malaysian teachers in developing their MHL?' under the two themes: (1) 'people who facilitate' and (2) 'structures that facilitate.' The themes and their corresponding categories are illustrated in Figure 1.

People Who Facilitate Teacher MHL Development

School Counsellors. Two interviewees discussed how their school counsellors helped them develop their MHL. Interviewee A elaborated on how a counsellor helped her develop her MHL by saying:

> *...this kid is actually…facing this. And when I talk to the counsellor and the counsellor says yes, that is true…it helps me…What I felt about the kid was particularly true. So, I began to… Google, is this true? I also need my counsellor's help to learn more about it* (Interviewee A).
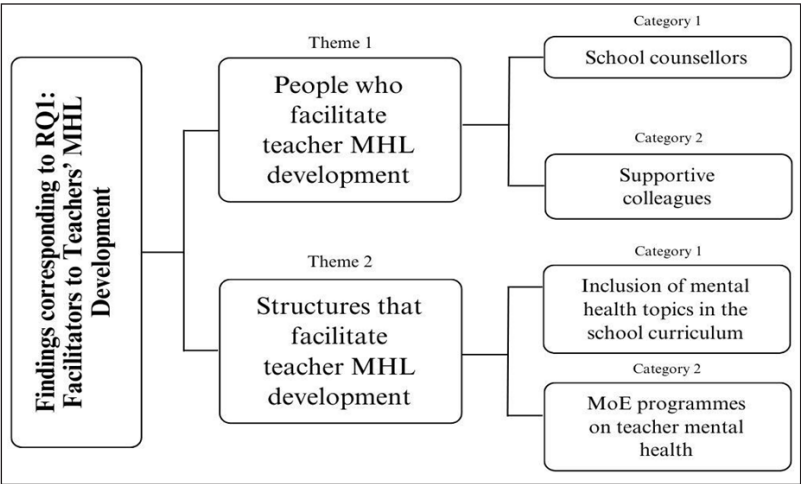

Figure 1. Facilitators to teachers' MHL development

In this excerpt, Interviewee A recounted a time in which the counsellor verified her suspicions about symptoms a student was displaying and supported her in her mental health research.

This factor answers the research question by stating that school counsellors facilitate the development of Malaysian teachers' MHL. This was an expected finding because, as outlined by the Ministry of Education KPM Handout No. 12 2012, Malaysian school counsellors are tasked with managing student psychosocial and mental well-being as frontline mental health providers (Harun et al., 2024; Ku Johari & Isa Amat, 2019). Similarly, school counsellors are summarised in the US as 'educators with mental health training' (Blake, 2020). Thus, due to their unique positioning as persons knowledgeable about mental health in schools, it was anticipated that school counsellors would be one form of social support that would facilitate the development of teachers' MHL.

Supportive Colleagues. Four out of the five interviewees foregrounded the role their colleagues play in developing their MHL. For example, Interviewee D shared an instance in which her colleagues helped her develop her MHL, saying:

> *…my school helped me develop my mental health literacy…if we do have problems…a lot of things can be discussed…the principal is open for discussion. If you have any pressure… you can actually discuss with them,*

> *asking them for consultation…So I think that actually helped me in terms of knowing how…to have…good mental health* (Interviewee D).

In this excerpt, Interviewee D shared that the supportive admin staff in her school helped her develop her MHL by showing her how to care for her mental health.

The 'supportive colleagues' factor answers the research question by stating that one external factor that facilitates the development of Malaysian teachers' MHL is colleagues who share their mental health knowledge and support each other in the development of their MHL. What was unexpected about this finding was its salience; it was even more prominent than the 'school counsellors' category. Nevertheless, it is logical that teachers would support one another in developing their MHL by exchanging knowledge and providing advice, as research has shown that teachers find peer support to be helpful in coping with new or challenging situations, such as student or personal struggles with mental health (Boyle et al., 2011).

Implications of the findings related to the theme 'People Who Facilitate.' The findings that school counsellors and supportive colleagues facilitate teachers' MHL development are new because Li et al. (2022), the study which found that teachers' social support is positively correlated with their MHL, did not include these groups of people in their definition of social support. Instead, Li et al. (2022) only included an ambiguous group they called 'close

In this excerpt, Interviewee A shared that the programme provided insight into students' thinking, expanded teachers' understanding of mental health, and provided practical tips on managing students.

This finding answers the research question by saying that one facilitator for teacher MHL development is the MoE programmes on teacher mental health. This finding is consistent with the aims of these programmes, which, summarised, are to improve teachers' personal mental health management skills (Ministry of Education Malaysia, 2021). As possessing the skills to care for one's mental health is part of MHL, these programmes essentially seek to develop teachers' MHL. Therefore, this finding that these programmes do, in fact, support teacher MHL development highlights their effectiveness. These programmes also mirror those in Canada, Australia, Japan, Cambodia, and Vietnam, which have been successful in developing teacher MHL (Bowyer et al., 2023; Nguyen et al., 2020; Woloshyn & Savage, 2018; Yamaguchi et al., 2021).

It is worth mentioning that such programmes are not without their issues. Interviewee D spoke of the strain the courses add to teachers' already heavy workload, saying, '…it does not really help…because actually makes us teachers more stressful.' Additionally, Interviewee D said that the course only takes place once a year, rendering it ineffective for teachers who are unfamiliar with mental health. Unfortunately, the unsustainability of such courses whereby external resources are brought into the school context is a pattern found in other studies (Kutcher et al., 2015).

Barriers to Teachers' MHL Development

This chapter will discuss the findings under the three themes that answer the second research question, 'From their experience, what external factors act as barriers to Malaysian teachers developing their mental health literacy?'. The first theme is 'barriers due to Malaysian context', the second is 'unsupportive school community', and the third is 'structural barriers.' The themes and their corresponding categories are illustrated in Figure 2.

Barriers Due to Malaysian Context

In the interview data, two barriers stemming from the Malaysian context were identified—superstitions and societal disbelief in mental illness. Combined, these two make up the theme of 'barriers due to Malaysian context.'

Superstitions. Two interviewees shared how Malaysian societal superstitions have interfered with the development of their MHL in the past. Interviewee E spoke of superstition's interference with her MHL development when she stated:

> *There are still people who think that…this person needs to pray more because they are not healthy…Must have something else that is bothering her…For example, hysteria, people might think of possession, but it can be explained in simple scientific terms* (Interviewee E).
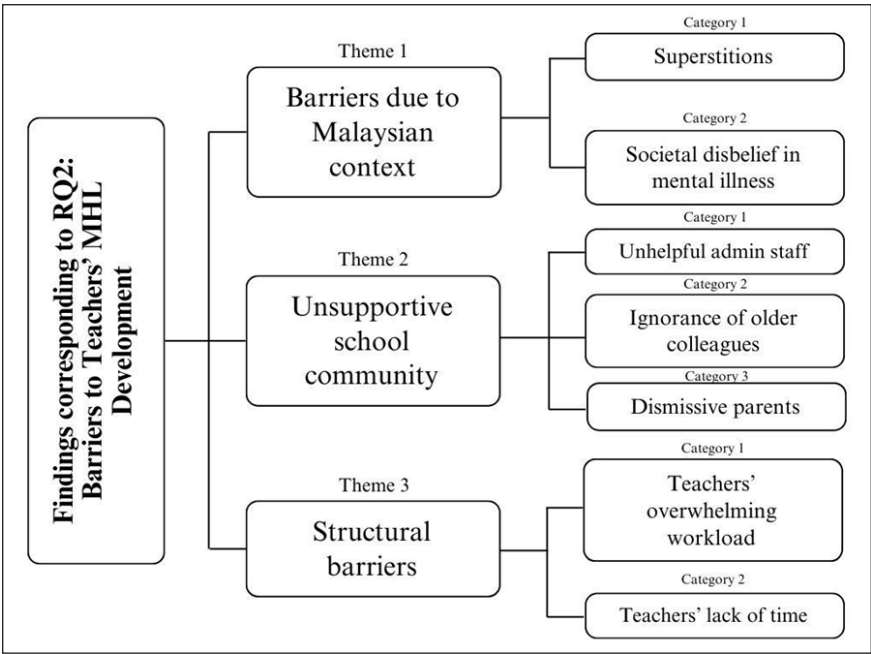
Figure 2. Barriers to teachers' MHL development

Here, Interviewee E shared how societal superstitions created a social context not conducive to learning more about mental health.

'Superstitions' answers the research question by stating that Malaysian superstitions are a barrier to the development of teacher MHL. It is worth noting that such superstitions are not unique to Malaysian society; superstitions affecting MHL development have long been studied and documented in other communities as well (Alqasir & Ohtsuka, 2024). These societal beliefs prevent the development of teacher MHL by presenting an alternative supernatural explanation (i.e. possession by a spirit) for symptoms of mental illness, a phenomenon that has been studied in both the Malaysian context and beyond in previous research (Mohamad et al., 2013;

Razali et al., 1996). This attribution of mental illness symptoms to supernatural causes acts as a barrier to teachers' MHL development because it steers teachers away from understanding mental illness as a medical issue. Teachers in this situation, therefore, do not seek to learn more about mental illness and do not develop their MHL. This finding is significant because it addresses a key element of teacher MHL—their beliefs towards mental health. Identifying one barrier to healthy mental health beliefs could improve the quality of MHL development programmes by shedding light on a specific belief to target in said programmes.

Societal Disbelief in Mental Illness. Four out of the five interviewees elucidate that Malaysian society's disbelief in mental

illness acts as a barrier to them developing their MHL. Interviewee A stated:

> *…sometimes when we grow up, we have this certain belief [where] mental health does not exist for kids. It does not exist for teenagers…it does not exist for adults as well* (Interviewee A).

In this excerpt, Interviewee A highlighted a cultural belief whereby mental health and, thus, mental illness are said not to be real.

This finding answers the research question by stating that Malaysian societal disbelief in mental illness acts as a barrier to the development of teacher MHL. This disbelief, which has previously been examined in both the Malaysian context and the wider international community, poses a challenge to teachers developing their MHL because it makes them reluctant to learn more about mental health (Mohamad et al., 2012; Stuart, 2005). This finding, like the others in the 'barriers due to the Malaysian context' theme, is partially new in that it was anticipated due to the widespread stigma of mental illness in Malaysia and around the world but has not been previously linked to teacher MHL development (Rashid, 2023). Thus, it contributes to existing knowledge in the same way that the other findings in this theme do, by pinpointing a belief to tackle in Malaysian teacher MHL development programmes.

Unsupportive School Community

The interview data identified three barriers due to an unsupportive school community: unhelpful admin staff, ignorance of older colleagues, and dismissive parents. Combined, these three make up the theme of 'barriers due to an unsupportive school community.'

Unhelpful Admin Staff. On unhelpful admin staff, Interviewee B stated:

> *…there are also supervisors… Like the headmaster, principal…who takes lightly or does not care about this [mental health]* (Interviewee B).

In this excerpt, Interviewee B stated that she has experienced admin staff who do not care about mental health.

This finding, which was found in two out of the five interviewees' data, answers the research question by stating that unhelpful admin staff are a barrier to the development of teacher MHL due to their strong influence on their teachers' professional development (Wahab et al., 2020). Considering the barriers due to the cultural context discussed in the previous theme, this is an unfortunately unsurprising finding; admin staff are also susceptible to contextual barriers such as superstitious beliefs about mental health and societal disbelief in it. Additionally, admin staff may be unprepared and untrained to manage and support the development of teacher MHL, as their own MHL may also be underdeveloped (Watson et al., 2022).

It is recommended that in addition to teachers, admin staff are also targeted in school MHL development programmes to address this barrier. The programmes should be tailored according to one's role in the

school so that role-specific concerns can be addressed. For example, admin staff can be trained to facilitate open conversations about mental health with faculty members and students alike.

Ignorance of Older Colleagues. Three out of the five interviewees shared that their older colleagues who lacked awareness of mental health made it challenging to develop teachers' MHL. Interviewee D, in answering the interview question, 'What do you think are the barriers to developing or improving teacher mental health literacy?' responded:

> *I think one…is acceptance of the teachers, especially the old teachers…I think a lot of teachers…40 years and above, are not really aware of or exposed to symptoms of mental health literacy, and even they are not exposed to social media about this mental health* (Interviewee D).

Here, Interviewee D examined the reason behind older colleagues' lack of awareness, namely their lack of exposure to mental health.

This finding, which was found in three out of the five interviewees' responses, answers the research question by stating that the ignorance of their older colleagues acts as a barrier to teachers developing their MHL. As mentioned earlier, social support affects people's development of their MHL (Li et al., 2022). Therefore, when such support is lacking due to insufficient exposure, one's own MHL can become underdeveloped as well.

This specific quote also highlights a reason for the ignorance of older colleagues, namely their lack of digital exposure to mental health issues. In today's world, digital literacy is key to accessing online health information (Shi et al., 2021). However, research has shown that the general population of older adults fall behind younger generations' uptake of electronic technology (Arcury et al., 2020). This lack of digital literacy can thus prevent older adults, including older teachers, from being exposed to online information on mental health issues.

Dismissive Parents. In 'dismissive parents,' three out of the five interviewees highlighted the effects of dismissive parents on teachers' ability to develop their MHL. On this, Interviewee B stated:

> *…you observe the student, and the student needs help. When you tell the parents, the parents are dismissive. And the student does not get help at all.* (Interviewee B)

Part of MHL is the necessary skills and knowledge to care for other people's mental health. In the above excerpt, Interviewee B shared that when parents are dismissive of their child's mental health issues, teachers feel helpless and are robbed of an opportunity to further develop their MHL.

This finding answers the research question by stating that one external factor that acts as a barrier to the development of Malaysian teachers' MHL is dismissive parents. When students' parents are

dismissive of their child's mental health needs, teachers feel helpless and do not further pursue the case. Had the parents not been dismissive, the teacher could have learned about avenues for the child to seek professional help. This would have been a learning opportunity for the teacher, as it would expand their MHL by providing them with more knowledge and resources on how to care for the mental health of others.

Implications of an Unsupportive School Community. The findings in this theme foreground the fact that tackling the issue of underdeveloped teacher MHL requires a whole-school approach. In other words, developing and improving teacher MHL does not entail training the teachers alone; the whole school community, including admin staff and parents, needs to support this endeavour by taking measures to improve their own MHL, too. This contributes to existing practical knowledge by expanding the scope of teacher MHL development—all adult members of the school community can take part.

Structural Barriers

Teachers' Overwhelming Workload. Four out of the five interviewees expressed that teachers' workload was so overwhelming that teachers simply could not develop their MHL. Interviewee D said:

> *…we have a lot of things…to do, like teaching, we need to handle events…I would say some teachers might see a burden where, OK, you*

need to attend a class on mental health literacy…actually a burden for some. (Interviewee D)

In this excerpt, Interviewee D spoke of teachers' event management role and how adding MHL development classes on top of Malaysian public school teachers' already long list of responsibilities would be burdensome.

This finding answers the research question by stating that one external factor that acts as a barrier to the development of Malaysian teachers' MHL is the overwhelming workload of Malaysian public school teachers. When asked to elaborate, participants disclosed that Malaysian public school teachers are tasked with more than teaching. They must manage events, complete large amounts of clerical work, and attend courses and programmes. Even teaching has become increasingly challenging due to the high number of students per class (30-40 with only one teacher) and the requirement that teachers teach more than one subject, often beyond their expertise (Jain, 2023). Consequently, teachers feel overwhelmed and are reluctant to attend yet another programme, even if said programme is for the development of their MHL. This finding is significant because it shows that in pursuit of developed teacher MHL, educational stakeholders must first ease the teacher workload.

Teachers' Lack of Time. Four out of the five interviewees stated that a lack of time prevented teachers from developing their MHL. Interviewee C elaborated upon this lack of time when she stated:

We can have wonderful programs in school, but time constraints… a lot of programs going on outside these days, sports, and sometimes they have courses. So it is very difficult to get all teachers to attend a programme …we have extra classes (Interviewee C).

In this excerpt, Interviewee C explained that other things demanded teachers' time, such as programmes, courses, sports, and extra classes for students.

This finding answers the research question by identifying teachers' lack of time as one external factor that acts as a barrier to the development of Malaysian teachers' MHL. Interviewee D disclosed that teachers are often called in on weekends, thus leaving them with very little time to take care of themselves and their families, much less to take on an additional programme such as one for MHL development. This finding is consistent with studies on teacher burnout in Malaysia, which similarly revealed that teachers have little spare time because they frequently need to work overtime (Pau et al., 2022). Additionally, it contributes to existing practical knowledge by foregrounding a fixable obstacle to Malaysian teachers developing their MHL. If educational stakeholders value teacher MHL as much as they should, then they would take measures to free teachers' time so that they are able to develop this literacy.

CONCLUSION

This study successfully identified eleven external factors that influence the development of teacher MHL.

The first research question focused on factors which facilitate MHL development, revealing four factors in two distinct themes, 'people who facilitate' and 'structures that facilitate.' Notably, social support from school counsellors and colleagues proved influential, aligning with previous research findings. Additionally, structural support such as integrating mental health topics into the curriculum and implementing Ministry of Education programmes was beneficial in developing teacher MHL.

The second research question examined barriers to teacher MHL development, finding seven factors across three themes, 'barriers due to Malaysian context,' 'unsupportive school community,' and 'structural barriers.' Harmful societal beliefs, such as superstitions and disbelief in mental illness, were identified, emphasising the need to address these beliefs in MHL programs. The study also highlighted the significance of a whole-school approach involving all adults in the school community— such as older colleagues, admin staff, and parents—to develop teachers' MHL. Lastly, structural barriers like teachers' excessive workload and time constraints underscored the importance of reducing these burdens to promote teacher MHL development.

Implications and Limitations

This study reveals two important implications. Firstly, it demonstrates that developing teacher MHL in Malaysia is feasible. The participants in this study show willingness and capability to enhance their MHL when provided with essential social

and structural support. This willingness highlights the potential for progress in addressing the issue of underdeveloped teacher MHL, even in the face of numerous challenges.

Secondly, the study highlights the impact of the entire school environment on teachers' MHL development. Previous programmes often focused solely on teacher training, neglecting crucial factors such as reducing teacher workload and educating administrative staff, parents, and older colleagues (Yamaguchi et al., 2019). Recognising the holistic influence of the school community is key to more effective teacher MHL development initiatives. This implication is also in line with Vygotsky's theory of defectology, in that both believe the responsibility to accommodate differences, including mental health struggles, falls on the shoulders of the whole learning community.

The main limitation of this study is its inability to generalise its findings due to the small sample size and its specificity in recruitment criteria. In an effort to avoid absolutism, this study recognises that its findings only explore the experiences of female, English-speaking Malaysian public school teachers based in Selangor who are under the age of 60 (Hammer, 2011). In other words, this study's findings cannot reflect variations across different populations, such as those from different language proficiencies, genders, age groups, and school types. A more diverse sample might have highlighted barriers and facilitators to teacher MHL development.

Future research can address these limitations using a larger, more diverse sample or conducting comparative studies across different locations, school types, genders, and age groups.

Recommendations for Future Practice and Research

The first set of recommendations is a series of suggested adjustments to make to the structure of existing mental health programmes for teachers. Two interviewees recommended making such programmes more interactive, and one interviewee suggested using role play to engage teachers and ensure that they get more hands-on practice. Additionally, Interviewee D emphasised the importance of a consistent programme that occurred more than once a year as she believed that an annual programme was ineffective in leaving a lasting impression on teachers, particularly for those rarely exposed to mental health knowledge.

The second set of recommendations targets the aforementioned programmes' content. Interviewee D recommended including an explanation of how the programme can improve teachers' teaching and mental health so that teachers can better understand why developing their MHL is important. The content should also target harmful societal beliefs that are barriers to teachers developing their MHL, such as superstitions and disbelief in mental health.

Interviewee E proposed making counsellors available for teachers to lean on for support. Interestingly, Interviewee

C discussed an existing avenue for teacher mental health support at District Offices in her interview, but the other interviewees' lack of knowledge of this counselling service suggests that it is not well-known. This study thus recommends making these teacher counselling services more accessible so that teachers can get support for their mental health and improve their MHL by developing the skills to care for their own and other people's mental health.

The last practical suggestion is to recognise that teachers are not mental health experts and should not be expected to bear the responsibility of caring for students' mental health alone. To put this notion into practice, educational communities should work towards including other staff members and parents in MHL-developing initiatives.

Similarly, future studies can examine the factors that influence the MHL development of school counsellors. As mentioned in the analysis, school counsellors are seen as in-school advisors on student mental health. Therefore, it can be said that their MHL needs to be the most developed out of all the members of a school's staff and is thus worthy of study.

ACKNOWLEDGEMENT

REFERENCES

Abdelsalam, N. M., & Said, R. M. (2022). Level and predictors of mental health literacy of depression and suicide among undergraduate medical students. *Middle East Current Psychiatry, 29*, Article 64. https://doi.org/10.1186/s43045-022-00229-6

Adhabi, E., & Anozie, C. B. (2017). Literature review for the type of interview in qualitative research. *International Journal of Education, 9*(3), 86-97. https://doi.org/10.5296/ije.v9i3.11483

Allmark, P., Boote, J., Chambers, E., Clarke, A., McDonnell, A., Thompson, A., & Tod, A. M. (2009). Ethical issues in the use of in-depth interviews: Literature review and discussion. *Research Ethics Review, 5*(2), 48-54. https://doi.org/10.1177/174701610900500203

Alqasir, A., & Ohtsuka, K. (2024). The impact of religio-cultural beliefs and superstitions in shaping the understanding of mental disorders and mental health treatment among Arab Muslims. *Journal of Spirituality in Mental Health, 26*(3), 279-302. https://doi.org/10.1080/19349637.2023.2224778

Archibald, M. M., Ambagtsheer, R. C., Casey, M. G., & Lawless, M. (2019). Using Zoom video conferencing for qualitative data collection: Perceptions and experiences of researchers and participants. *International Journal of Qualitative Methods, 18*. https://doi.org/10.1177/1609406919874596

Arcury, T. A., Sandberg, J. C., Melius, K. P., Quandt, S. A., Leng, X., Latulipe, C., Miller, D. P., Smith, D.A., & Bertoni, A. G. (2020). Older adult internet use and eHealth literacy. *Journal of Applied Gerontology, 39*(2), 141-150. https://doi.org/10.1177/0733464818807468

Arifin, S. R. M. (2018). Ethical considerations in qualitative study. *International Journal of Care Scholars, 1*(2), 30-33. https://doi.org/10.31436/ijcs.v1i2.82

Beasley, L., Hoffman, S., & Sears, J. (2024). The mental health literacy of NCAA college coaches: knowledge, beliefs, and resources. *Journal of Issues in Intercollegiate Athletics, 17*(1), Article 10. https://doi.org/10.51221/sc.jiia.2024.17.1.8

Beresford, M., Wutich, A., Du Bray, M. V., Ruth, A., Stotts, R., SturtzSreetharan, C., & Brewis, A. (2022). Coding qualitative data at scale: Guidance for large coder teams based on 18 studies. *International Journal of Qualitative Methods, 21.* https://doi.org/10.1177/16094069221075860

Beukema, L., Tullius, J. M., Korevaar, L., Hofstra, J., Reijneveld, S.A., & de Winter, A.F. (2022). Promoting mental health help-seeking behaviours by mental health literacy interventions in secondary education? Needs and perspectives of adolescents and educational professionals. *International Journal of Environmental Research and Public Health*, *19*(19), Article 11889. https://doi.org/10.3390/ ijerph191911889

Blake, M. K. (2020). Other duties as assigned: The ambiguous role of a high school counselor. *Sociology of Education, 93*(4), 315-330. https://doi.org/10.1177/0038040720932563

Bowen, G. (2009). Document analysis as a qualitative research method. *Qualitative Research Journal, 9*(2), 27-40. https://doi.org/10.3316/QRJ0902027

Bowyer, M., Fein, E. C., & Krishnamoorthy, G. (2023). Teacher mental health literacy and child development in Australian primary schools: A program evaluation. *Education Sciences, 13*(4)*,* Article 329. https://doi.org/10.3390/educsci13040329

Boyle, C., Topping, K., Jindal-Snape, D., & Norwich, B. (2011). The importance of peer-support for teaching staff when including children with special needs. *School Psychology International, 32*(2), 167-184. https://doi.org/10.1177/0143034311415783

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77-101. https://doi.org/10.1191/1478088706qp063oa

Brosnan, L., & Flynn, E. (2017). Freedom to negotiate: Proposal extricating capacity from consent. *International Journal of Law in Context, 13*(Special issue 1), 58-76. https://doi.org/10.1017/S1744552316000471

Candela, A. G. (2019). Exploring the function of member checking. *The Qualitative Report, 24*(3), 619-628. https://doi.org/10.46743/2160-3715/2019.3726

Carlson, J. A. (2010). Avoiding traps in member checking. *The Qualitative Report, 15*(5), 1102-1113. https://doi.org/10.46743/2160-3715/2010.1332

Dias, P., Campos, L., Almeida, H., & Palha, F. (2018). Mental health literacy in young adults: Adaptation and psychometric properties of the mental health literacy questionnaire. *International Journal of Environmental Research and Public Health*, *15*(7), Article 1318. https://doi.org/10.3390/ijerph15071318

Elhami, A., & Khoshnevisan, B. (2022). Conducting an interview in qualitative research: The modus operandi. *MEXTESOL Journal, 46*(1), 1-7. https://doi.org/10.61871/mj.v46n1-3

Flick, U. (2018). *An introduction to qualitative research* (6th ed.). Sage.

Furnham, A., & Swami, V. (2018). Mental health literacy: A review of what it is and why it matters. *International Perspectives in Psychology*, *7*(4), 240-257. https://doi.org/10.1037/ipp0000094

Golafshani, N. (2003). Understanding reliability and validity in qualitative research. *The Qualitative Report, 8*(4), 597-606. https://doi.org/10.46743/2160-3715/2003.1870

Hadjimina, E., & Furnham, A. (2017). Influence of age and gender on mental health literacy of anxiety disorders. *Psychiatry Research, 251*, 8-13. https://doi.org/10.1016/j.psychres.2017.01.089

Hammer, C. S. (2011). The importance of participant demographics. *American Journal of Speech-Language Pathology, 20*(4), 261. https://doi.org/10.1044/1058-0360(2011/ed-04)

Harun, M. M., Wan Jaafar, W. M., Ismail, A., & Arifin, S. (2024). Personal and academic multicultural experiences perceived multicultural counselling competence and multicultural counselling self-efficacy among Malaysian counsellor trainees. *Pertanika Journal of Social Sciences and Humanities, 32*(S3), 93-112. https://doi.org/10.47836/pjssh.32.S3.06

Jafari, A., Nejatian, M., Momeniyan, V., Barsalani, F. R., & Tehrani, H. (2021). Mental health literacy and quality of life in Iran: A cross-sectional study. *BMC Psychiatry, 21*, Article 499. https://doi.org/10.1186/s12888-021-03507-5

Jain, J. (2023, April 5). *Filling the void: Malaysia's struggle with the teacher shortage.* Malay Mail. https://www.malaymail.com/news/what-you-think/2023/04/05/filling-the-void-malaysias-struggle-with-the-teacher-shortage-jasmine-anak-jain/63326

Jorm, A. F., Korten, A. E., Jacomb, P. A., Christensen, H., Rodgers, B., & Pollitt, B. (1997). Mental health literacy: A survey of the public's ability to recognise mental disorders and their beliefs about the effectiveness of treatment. *Medical Journal of Australia, 166*(4), 182-186. https://doi.org/10.5694/j.1326-5377.1997.tb140071.x

Khalil, K., Das, P., Kammowanee, R., Saluja, D., Mitra, P., Das, S., Gharai, D., Bhatt, D., Kumar, N., & Franzen, S. (2021). Ethical considerations of phone-based interviews from three studies of COVID-19 impact in Bihar, India. *BMJ Global Health, 6*(Suppl. 5), Article e005981. https://doi.org/10.1136/bmjgh-2021-005981

Ku Johari, K. S., & Isa Amat, M. (2019). Malaysian school counsellors' challenges in job description, job satisfaction and competency. *RELIGACIÓN: Revista de Ciencias Sociales y Humanidades, 4*(19), 93-99.

Kutcher, S., Bagnell, A., & Wei, Y. (2015). Mental health literacy in secondary schools: a Canadian approach. *Child and Adolescent Psychiatric Clinics of North America, 24*(2), 233-244. https://doi.org/10.1016/j.chc.2014.11.007

Kutcher, S., Wei, Y., & Congilio, C. (2016). Mental health literacy: past, present, and future. *The Canadian Journal of Psychiatry, 61*(3), 154-158. https://doi.org/10.1177/0706743715616609

Lauber, C., Nordt, C., Falcato, L., & Rössler, W. (2003). Do people recognise mental illness? Factors influencing mental health literacy. *European Archives of Psychiatry and Clinical Neuroscience, 253*, 248-251. https://doi.org/10.1007/s00406-003-0439-0

Lee, H. Y., Lytle, K., Yang, P. N., & Lum, T. (2010). Mental health literacy in Hmong and Cambodian elderly refugees: A barrier to understanding, recognising, and responding to depression. *International Journal of Aging and Human Development, 71*(4), 323-344. http://doi.org/10.2190/AG.71.4.d

Leech, N. L., & Onwuegbuzie, A. J. (2007). An array of qualitative data analysis tools: A call for data analysis triangulation. *School Psychology Quarterly, 22*(4), 557-584. https://doi.org/10.1037/1045-3830.22.4.557

Li, S., Sheng, Y., & Jing, Y. (2022). How social support impact teachers' mental health literacy: A chain mediation model. *Frontiers in Psychology, 13*, Article 851332. https://doi.org/10.3389/fpsyg.2022.851332

Maguire, M., & Delahunt, B. (2017). Doing a thematic analysis: a practical, step-by-step guide for learning and teaching scholars. *All Ireland Journal of Education, 9*(3), 3351-33514.

Md Nor, S. B., Idris, M. A., & Ahmad Tarmizi, S. A. (2023). Counsellors' emotions at work: What can we learn from their experiences? *Pertanika Journal of Social Sciences and Humanities, 31*(1), 139-159. https://doi.org/10.47836/pjssh.31.1.08

Mendenhall, A. N., & Frauenholtz, S. (2013). Predictors of mental health literacy among parents of youth diagnosed with mood disorders. *Child and Family Social Work, 20*(3), 300-309. https://doi.org/10.1111/cfs.12078

Miller, L., Musci, R., D'Agati, D., Alfes, C., Beaudry, M. B., Swartz, K., & Wilcox, H. (2019). Teacher mental health literacy is associated with student literacy in the adolescent depression awareness program. *School Mental Health*, *11*, 357-363. https://doi.org/10.1007/s12310-018-9281-4

Ministry of Education Malaysia. (2021, June 30). *Program Meningkatkan Kesedaran Kesejahteraan Psikologi Warga KPM* [Programme to Improve Mental Health Awareness Among Ministry of Education Staff]. https://anyflip.com/jxdpl/amjt/basic

Mohamad, M. S., Subhi, N., Zakaria, E., & Mohamad Aun, N. S. (2013). Cultural influences in mental health help-seeking among Malaysian family caregivers. *Pertanika Journal of Humanities and Social Sciences, 21*(S1), 1-15.

Mohamad, M. S., Zabidah, P., Fauziah, I., & Sarnon, N. (2012). Mental health literacy among family caregivers of schizophrenia patients. *Asian Social Science, 8*(9), 74-82. https://doi.org/10.5539/ass.v8n9p74

Morgan, H. (2021). Conducting a qualitative document analysis. *The Qualitative Report, 27*(1), 64-77. https://doi.org/10.46743/2160-3715/2022.5044

Munawar, K., Mukhtar, F. M., Choudhry, F. R., & Ng, A. L. (2021). Mental health literacy: A systematic review of knowledge and beliefs about mental disorders in Malaysia. *Asia-Pacific Psychiatry,*

14(1), Article e12475. https://doi.org/10.1111/appy.12475

Natow, R. S. (2020). The use of triangulation in qualitative studies employing elite interviews. *Qualitative Research, 20*(2), 160-173. https://doi.org/10.1177/1468794119830077

Nguyen, A. J., Dang, H., Bui, D., Phoeun B., & Weiss, B. (2020). Experimental evaluation of a school-based mental health literacy program in two Southeast Asian nations. *School Mental Health*, *12*, 716-731. https://doi.org/10.1007/s12310-020-09379-6

Ohrt, J. H., Deaton, J. D., Linich, K., Guest, J. D., Wymer, B., & Sandonato, B. (2020). Teacher training in K–12 student mental health: A systematic review. *Psychology in the Schools, 57*, 833-846. https://doi.org/10.1002/pits.22356

Pathak, A., & Intratat, C. (2012). Use of semi-structured interviews to investigate teacher perceptions of student collaboration. *Malaysian Journal of ELT Research, 8*(1), 1-10.

Pau, K., Ahmad, A., Tang, H., Jusoh, A. J., Perveen, A., & Kong, K. T. (2022). Mental health and wellbeing of secondary school teachers in Malaysia. *International Journal of Learning, Teaching, and Educational Research, 21*(6), 50-70. https://doi.org/10.26803/ijlter.21.6.4

Phoa, P. K., Abdul Razak, A., Kuay, H. S., Ghazali, A. K., Abdul Rahman, A., Husain, M., Bakar, R. S., & Abdul Gani, F. (2022). The Malay literacy of suicide scale: A Rasch Model validation and its correlation with mental health literacy among Malaysian parents, caregivers and teachers. *Healthcare, 10*(7), Article 1304. https://doi.org/10.3390/healthcare10071304

Phoa, P. K., Abdul Razak, A., Kuay, H. S., Ghazali, A. K., Abdul Rahman, A., Husain, M., Bakar, R. S., & Abdul Gani, F. (2023). Predictors of mental health literacy among parents, guardians, and teachers of adolescents in West Malaysia. *International Journal of Environmental Research*

and Public Health, *20*(1), Article 825. https://doi.org/10.3390/ijerph20010825

Piper, S. E., Bailey, P. E., Lam, L. T., & Kneebone, I. I. (2018). Predictors of mental health literacy in older people. *Archives of Gerontology and Geriatrics, 79,* 52-56. https://doi.org/10.1016/j.archger.2018.07.010

Rashid, S. A. (2023, May 25). *Address stigma first to help mental patients.* Malaysiakini. https://www.malaysiakini.com/columns/666337

Razali, S. M., Khan, U. A., & Hasanah, C. I. (1996). Belief in supernatural causes of mental illness among Malay patients: Impact on treatment. *Acta Psychiatrica Scandinavica, 94*(4), 229-233. https://doi.org/10.1111/j.1600-0447.1996.tb09854.x

Roberts, R. E. (2020). Qualitative interview questions: Guidance for novice researchers. *The Qualitative Report, 25*(9), 3185-3203. https://doi.org/10.46743/2160-3715/2020.4640

Shi, Y., Ma, D., Zhang, J., & Chen, B. (2021). In the digital age: A systematic literature review of the e-health literacy and influencing factors among Chinese older adults. *Journal of Public Health: From Theory to Practice, 31*, 679-687. https://doi.org/10.1007/s10389-021-01604-z

Spiker, D. A., & Hammer, J. H. (2018). Mental health literacy as theory: Current challenges and future directions. *Journal of Mental Health, 28*(3), 238-242. https://doi.org/10.1080/09638237.2018.1437613

Stuart, H. (2005). Fighting stigma and discrimination is fighting for mental health. *Canadian Public Policy, 31*(s1), S21-S28.

Tay, K. W., Ong, A. W., Pheh, K. S., Low, S. K., Tan, C., S., & Low, P. K. (2019). Assessing the effectiveness of a mental health literacy programme for refugee teachers in Malaysia.

Malaysian Journal of Medical Science, 26(6), 120-126. https://doi.org/10.21315/mjms2019.26.6.12

Wacker, J. G. (2004). A theory of formal conceptual definitions: Developing theory-building measurement instruments. *Journal of Operations Management, 22*(6), 629-650. https://doi.org/10.1016/j.jom.2004.08.002

Wahab, J. A., Mansor, A. Z., Hussin, M., & Kumarasamy, S. (2020). Headmasters' instructional leadership and its relationship with teacher performance. *Universal Journal of Educational Research, 8*(11A), 97-102. https://doi.org/10.13189/ujer.2020.082112

Watson, K. R., Capp, G., Astor, R. A., Kelly, M. S., & Benbenishty, R. (2022). "We need to address the trauma": School social workers' views about student and staff mental health during COVID-19. *School Mental Health, 14*, 902-917. https://doi.org/10.1007/s12310-022-09512-7

Woloshyn, V., & Savage, M. (2018). Increasing teacher candidates' mental health literacy and stress coping skills through an elective mental health and wellness course. *International Journal of Inclusive Education, 24*(9), 921-935. https://doi.org/10.1080/13603116.2018.1497097

Yamaguchi, S., Foo, J. C., Kitagawa, Y., Togo, F., & Sasaki, T. (2021). A survey of mental health literacy in Japanese high school teachers. *BMC Psychiatry, 21,* Article 478. https://doi.org/10.1186/s12888-021-03481-y

Yamaguchi, S., Foo, J. C., Nishida, A., Ogawa, S., Togo, F., & Sasaki, T. (2019). Mental health literacy programs for school teachers: A systematic review and narrative synthesis. *Early Intervention in Psychiatry, 14*(1), 14-25. https://doi.org/10.1111/eip.12793

Exploring Teaching Witnesses' Feedback in the Teaching Experiments Phase of Design-based Research for Differential Calculus Instructional Lessons

Tiew Mee Chien, Kwan Eu Leong* and Kah Heng Chua

Department of Mathematics and Science Education, Faculty of Education, Universiti Malaya, 50603 Kuala Lumpur, Malaysia

ABSTRACT

This study assesses the strengths and weaknesses of the designed Differential Calculus Instructional Lessons (DCIL) for teaching differential calculus from the perspective of teaching witnesses. Additionally, the study also focused on identifying suggested improvements from these teaching witnesses to refine DCIL. The research employed a design-based research approach, and this study focused only on outcomes from semi-structured interviews with teaching witnesses who participated in separate teaching experiment cycles and their evaluation of the content validity of DCIL on the feedback form. Findings revealed that the strengths of the instructional lessons encompassed lesson effectiveness, interactive teaching strategies, and effective technology use. The results also highlighted specific challenges hindering students' understanding of differentiation topics, including content overload and time constraints, difficulties in understanding differentiation concepts, and limited feedback and interaction on the Desmos platform. The teaching witnesses recommended two major enhancements: improving student engagement and interaction and enhancing the Desmos platform for more effective teaching practices. The study exemplifies collaborative design-based research where the researcher engages course coordinators as teaching witnesses throughout two teaching cycles and contributes insights for refining the designed DCIL in teaching and learning differential calculus.

Keywords: Differential calculus, design-based research, Differential Calculus Instructional Lessons (DCIL), Mathematics education, teaching experiment, teaching witnesses

INTRODUCTION

Differential calculus, a fundamental branch of calculus distinct from integral calculus, is essential for understanding various mathematical concepts such as ordinary differential equations and multivariate calculus (Hamda et al., 2020; Kwon et al., 2015; Mcgee & Moore-Russo, 2015). Mastering this subject is crucial for students, particularly those in pre-university programs, as it forms the basis for university-level studies. However, students often perceive calculus as challenging, primarily due to difficulties in understanding and problem-solving (Hashemi et al., 2020; Jones & Watson, 2018; Wagner et al., 2017).

Recent research highlighted a significant gap in mathematics education, where instructional materials often prioritised procedural knowledge, which means the educators placed more emphasis on memorisation and repetitive practice than on helping students develop deeper conceptual understanding through problem-solving (Hamid et al., 2021). This focus on procedural skills restricted students' ability to think critically and apply mathematical concepts in diverse contexts. Studies by Makgakga and Makwakwa (2016), Othman et al. (2018), and Setiawan (2022) indicated that this overreliance on memorisation impeded effective learning and failed to promote a comprehensive understanding of mathematical principles. Additionally, Brijlall and Ndlazi (2019) and Wagner et al. (2017) found that an emphasis on symbolic manipulations and neglected graphical representations can

hinder students' comprehension by not offering them multiple ways to visualise and understand mathematical concepts.

Educators were encouraged to integrate innovative teaching methods and technology into their practices to address these issues (Malaysian Qualifications Agency, 2019). The technology offered the potential for dynamic and interactive learning experiences that could bridge the gap between procedural knowledge and conceptual understanding, such as through visualisation and personalised learning. However, there was a notable gap in the effective integration of technology in teaching due to a lack of specific guidelines (Bedada & Machaba, 2022).

Design-based research has increasingly been utilised in educational research (The Design-Based Research Collective, 2003). It offers a framework for exploring innovative teaching methods and their impact on student learning (Molina et al., 2007). In this study, an instructional unit named Differential Calculus Instructional Lesson (DCIL) is designed, and a research team conducted design-based research in real classroom settings to test and revise this DCIL. The team included the researcher as the instructor who implemented the designed instructional lessons and the course coordinator as a teaching witness, primarily responsible for observing the lessons during the teaching experiment phase (Cobb et al., 2003). While many studies focus on technology integration or innovative teaching methods (Haryani & Hamidah, 2022; Koller et al., 2008; Shé,

Fhloinn, & Bhaird, 2023), few studies explore how teaching witnesses contribute to both pedagogy and the iterative design of educational interventions in calculus education. This study addresses the need for more evidence on how real-time feedback from teaching witnesses can be integrated into an ongoing design-based process, filling a gap in understanding how continuous observation and feedback impact student outcomes.

In the context of design-based research (DBR), teaching witnesses play significant roles in improving instructional methods and student learning experiences. DBR is an iterative process that involves collaboration between educators, who act as teaching witnesses and researchers to design, implement, and refine the intervention. Teaching witnesses, on the other hand, serve as observers to reflect on these educational interventions (Norton & McCloskey, 2008). By offering firsthand insights, they help to ensure that the implementation of new strategies or interventions is both effective and reflective of diverse learning needs (Bungum & Sanne, 2021). It is believed that the combination of DBR's systematic refinement process and teaching witnesses' practical observations is able to create a dynamic framework for advancing calculus pedagogy and enabling educators to better address complex mathematical concepts while catering to varying student abilities and learning styles.

The primary objective of the study is to investigate feedback from the teaching witnesses on the designed Differential Calculus Instructional Lessons (DCIL). The study also identified suggested enhancements by teaching witnesses for continuous improvement and modification of DCIL and addresses the following research questions:

Based on the teaching witnesses' feedback:

RQ1: What are the notable strengths of these designed instructional lessons?

RQ2: What are the identified weaknesses of these instructional lessons?

RQ3: What suggested enhancements can be made to the lesson to optimise its effectiveness?

LITERATURE REVIEW

Calculus

Differential calculus, a fundamental aspect of mathematics education, presents significant challenges for students, as identified in several studies (Bakri et al., 2020; Fatimah & Yerizon, 2019; Makgakga & Makwakwa, 2016). These difficulties arise from factors such as the introduction of new concepts and inadequate prior knowledge in integrating pre-calculus ideas with calculus (Fitriani et al., 2023). Proficiency in this field requires a deep conceptual understanding and skilled problem-solving skills, which many students struggle to attain due to insufficient understanding of essential elements (Bibi et al., 2019).

Numerous investigations have delved into students' understanding of derivatives, revealing cognitive barriers in integrating pre-calculus concepts and grappling with calculus principles (Hitt & Dufour, 2021). Similarly, Meiliasari and colleagues

(2021) identified students frequently fail to summarise their responses, and this leads to confusion when prompted for conclusions as they struggle to understand the fundamental concept of differentiation. Research indicates that students often encounter difficulties in understanding fundamental derivative concepts across various contexts, such as numerical, physical, verbal, and graphical (Haghjoo & Reyhani, 2021).

The framework of "concept image" and "concept definition" by Tall and Vinner (1981) has significantly influenced the understanding of how students grasp advanced mathematical concepts, particularly in calculus. This framework reveals that students' mental representations often do not align with formal mathematical definitions, leading to errors or misconceptions (Makonye & Luneta, 2014). For instance, the discrepancy between the formal definition and a student's concept image can cause difficulties when learning concepts like differential calculus, limits, and continuity (Tall & Vinner, 1981).

A study by Ojo and Olanipekun (2023) further emphasised that students frequently rely on a mix of correct and incorrect concept images, which can result in both accurate and flawed reasoning in calculus. For example, a student may correctly perceive a derivative as a slope but might misunderstand its broader applications due to incomplete or incorrect concept images. These issues often arise from a procedural focus in mathematics education, where students prioritise memorising steps over understanding the underlying principles.

Therefore, by understanding how concept image influences learning outcomes, educators can design targeted interventions to support students' understanding of calculus.

Few research suggested that the utilisation of visual reasoning skills and graphs in mathematics classrooms proved beneficial in helping students comprehend derivative concepts (Aspinwall et al., 1997; Borji et al., 2018; Hamid et al., 2021). These studies highlighted that incorporating technology into calculus instruction has shown promise in facilitating learning. Platforms like YouTube provide accessible resources for concept review (Lu, 2023), while graphic display software such as Desmos enables students to interact with visual representations and reinforce their conceptual understanding (Chechan et al., 2023; Chorney, 2021). Moreover, dynamic software like GeoGebra and SimCalc MathWorlds offer interactive experiences, fostering constructivist learning and promoting dialogue (Arango et al., 2015; Salinas et al., 2016). The literature strongly supports the benefits of incorporating technology in mathematics instruction, highlighting the importance of including course lecturers' opinions and feedback in the design process. Their input enhances teaching and learning and aids in refining instructional materials (Shahid et al., 2022).

Calculus in Design-based Research

Design-based Research (DBR) is an approach involving a systematic design process, and it has been employed to

investigate student understanding of calculus (Hamda et al., 2020; Pramesti & Dewi, 2023). For example, Hamda et al. (2020) utilised a design research approach to introduce the concept of the limit of a sequence using popular characters from a children's television show. Similarly, Keene et al. (2014) implemented an inquiry-based multivariable calculus course to enhance students' argumentation skills. Interventions by Block and Mercorelli (2015) effectively improved students' arguments and understanding.

Studies examined various aspects of instructional design in calculus, such as teaching integration by parts (Mariano et al., 2021) and observing active learning engineering calculus classrooms (Shahid et al., 2022). Others proposed hypothetical learning trajectories to enhance students' argumentative skills and understanding of multivariable calculus (Hamda et al., 2020). These studies contributed valuable insights into diverse approaches and considerations for effective instructional strategies in teaching calculus. This subject requires careful planning and execution of lessons to enhance student understanding and engagement.

METHODS

The research methodology employed in this study is structured around design-based research (DBR), consisting of three phases: preparation and design, conducting a teaching experiment, and carrying out a retrospective analysis (Bakker & van Eerde, 2015; Steffe & Thompson, 2000).

This approach involves an iterative cycle of designing, testing, evaluating, and refining the intervention in real-world contexts (Goff & Getenet, 2017; Koller et al., 2008). In each cycle of DBR, researchers collaborate closely with a teacher or lecturer, serving as a teaching witness, to identify problems, devise solutions, and refine interventions based on the evidence gathered (Kennedy-Clark, 2013). This paper focused specifically on evaluating the efficacy of Differential Calculus Instructional Lessons (DCIL) for teaching differential calculus. The evaluation was conducted only from the perspective of teaching witnesses, who observed the teaching experiment phases.

Unlike traditional experimental approaches, the teaching experiment methodology involved the researcher actively taking on the role of the instructor while closely collaborating with course lecturers who served as teaching witnesses (Molina et al., 2007). This collaboration enabled real-time reflection and refinement of instructional interventions, as they provided valuable insights into students' understanding and learning processes (Cobb et al., 2003; Stephan, 2015). These collaborative discussions between researchers and teaching witnesses were essential due to the contextual nature of DBR and the teaching witnesses' familiarity with their students' learning styles. Bungum and Sanne (2021) further highlighted teaching witnesses as active 'co-designers,' crucial for embedding DBR outcomes into teachers' practice, thereby enhancing learning experiences, fostering effective

collaboration, and aligning interventions with actual educational needs.

The teaching experiment comprised two cycles, each consisting of four instructional lessons, following DBR principles (Bakker & van Eerde, 2015). The study was conducted with a group of 16 foundations in science students from a private university, selected through purposive sampling to ensure diversity in achievement levels (Smith & Strahan, 2004). Students interacted with instructional content using individual devices equipped with the Desmos platform, fostering interactive learning experiences tailored to their needs. Each lesson was conducted over two hours. The content of the instructional lessons focused on curve properties through the analysis of first and secondary derivatives, as well as the application of differential calculus concepts via graphical representations from the Desmos platform.

During each cycle, discussions were held with course coordinators, serving as teaching witnesses, to assess lesson effectiveness and identify areas for improvement. Teaching Witness 1, an experienced lecturer with 10 years of teaching experience, and Teaching Witness 2, a relatively new lecturer with about two years of experience at the selected institution, observed all teaching episodes within their respective cycles to gain firsthand insights into student learning and operational dynamics. Although Teaching Witness 2 has only two years of experience at the selected institution, she had an additional two years of pre-university teaching experience at another institution before joining the current one. According to Melnick and Meister (2008), individuals with 4 to 37 years of experience are considered experienced teachers, which qualifies Teaching Witness 2 as an experienced lecturer in teaching mathematics. Another reason for selecting these two lecturers as teaching witnesses for this study is that they were both mathematics course coordinators at the time of the study, allowing them to provide more constructive opinions and feedback on the lessons, given their in-depth knowledge of the course. In subsequent discussion, Teaching Witness 1 referred to the lecturer who observed during the first cycle, while Teaching Witness 2 observed during the second cycle.

This study is limited in scope, focusing solely on the feedback of two teaching witnesses regarding the designed DCIL. The analysis primarily focused on interviews conducted with the teaching witnesses, providing insights into the strengths and weaknesses of the instructional lessons and suggesting improvements to enhance teaching and learning. The semi-structured interviews were conducted with the teachers on the day following each lesson and after the completion of each cycle to gather specific feedback (Rashidi et al., 2014). Additionally, feedback forms were completed after each teaching episode to assess the content validity of the designed instructional lessons.

Data Analysis

Content validity of Differential Calculus Instructional Lessons (DCIL) will be

assessed using a validation form, employing the Percentage Calculation Method (PCM) formulas as follows:

$$\text{Content Validity Level} = \frac{\text{Total score given by the expert}}{\text{Total score}} \times 100\%$$

(1)

The total score is determined by multiplying the number of items by the maximum score on the Likert scale. An instructional lesson is considered to have high content validity if the content validity score is 70% or above (Jamaludin, 2016).

The semi-structured interviews with two teaching witnesses were recorded and transcribed for analysis with ATLAS.ti 23 software, following Braun and Clarke's (2006) thematic analysis method. Thematic analysis involves becoming familiar with the data, generating initial codes, searching for themes, defining and naming those themes, and finally, reporting patterns (themes) within the data. The "member check" concept described by McKim (2023) and Thomas (2017) was applied, and transcripts were given to participants for feedback and corrections to ensure data accuracy and reliability, as recommended by Bogdan and Biklen (2007). This iterative process enhances the validation and trustworthiness of the collected qualitative data.

RESULTS

Measurement of Content Validity

Two teaching witnesses, each in one cycle, witnessed the classroom condition and gave feedback on the designed Differential Calculus Instructional Lessons (DCIL). These teaching witnesses then filled out a feedback form during each teaching episode, and they were interviewed by the researcher a day after the teaching episodes. In this session, their feedback on the teaching episodes and the witness feedback form will be detailed. The scores shown in Table 1 were the average scores from the four feedback forms provided by each teaching witness, using a scale ranging from 1 (denoting strongly disagree) to 10 (indicating strongly agree).

The achievement of content validation is calculated using the Percentage Calculation Method (PCM). The good content validation percentage was set at 70%. The overall performance for this designed DCIL has achieved the content validity of 87.34% with a coefficient value of 0.87, above 70% or 0.70. Based on the result, the contents in the DCIL are considered to be of good validity. Table 1 shows the content validity measurement for the designed DCIL.

Teaching Episodes Witness Interviews

The teachers were interviewed the day after each teaching episode to gather their feedback on the designed lesson. The overall feedback interview was also conducted after the whole cycle of DCIL implementation was done. The interview was held in the meeting room because the venue was quiet and the room was unoccupied. The teachers gave their responses to the interview questions based on their observations throughout the whole lesson in the classroom.

Table 1
Content validity measurement for the DCIL

Items	Teaching Witness 1	Teaching Witness 2
The content of this instructional lesson is appropriate for the student's educational level.	8.25	8.75
The content of this instructional lesson can be successfully implemented.	9	8.75
The content of this instructional lesson is suitable for the allocated time frame.	8	8.5
The content of this instructional lesson aligns with the syllabus for the Differentiation chapter in the Mathematics course.	9	9
The content of this instructional lesson meets the research objectives, specifically assessing students' mathematical understanding based on APOS theory.	8.5	9.25
The content of this instructional lesson incorporates Desmos instructional activities related to the topic of Differentiation.	8	8.5
The content of this instructional lesson can enhance students' mathematical understanding.	8.5	9.25
The content of this instructional lesson uses the correct terminology outlined in the Mathematics course syllabus for the pre-university program.	8.75	9.75
Total	68	71.75
Content Validity Achievement (100%)	87.34%	
Content Validity Coefficients (1.00)	0.87	

Each transcript was carefully analysed, and initial codes were assigned to significant statements made by the teaching witnesses. These codes were then grouped into categories, which were subsequently aligned with the research questions as predetermined themes. The outcomes of the interview were categorised into three primary themes to gain insights into the strengths and weaknesses of the designed DCIL lessons, as well as to propose improvements in lesson feedback and interaction.

Strengths of DCIL Lesson

Figure 1 shows the analysis of the interview transcripts from ATLAS.ti, which revealed three categories of the strengths of the designed DCIL lessons: Lesson Effectiveness and Achievement, Interactive Teaching Strategies and Effective Technology Use.

For the lesson effectiveness and achievement, the feedback gathered from the teaching witness's interview transcripts consistently highlights positive aspects regarding the overall structure, content suitability, and the achievement of learning outcomes. The lessons, particularly those in Lesson 2, were commended for their effectiveness in meeting the objectives outlined in the syllabus. For example, Teaching Witness 1 explained the suitability of the lesson's content as follows:

> *Researcher: Today, we are going to reflect on lesson 2.*
>
> *Teaching Witness 1: Okay, for this lesson, in section A, I found that the*
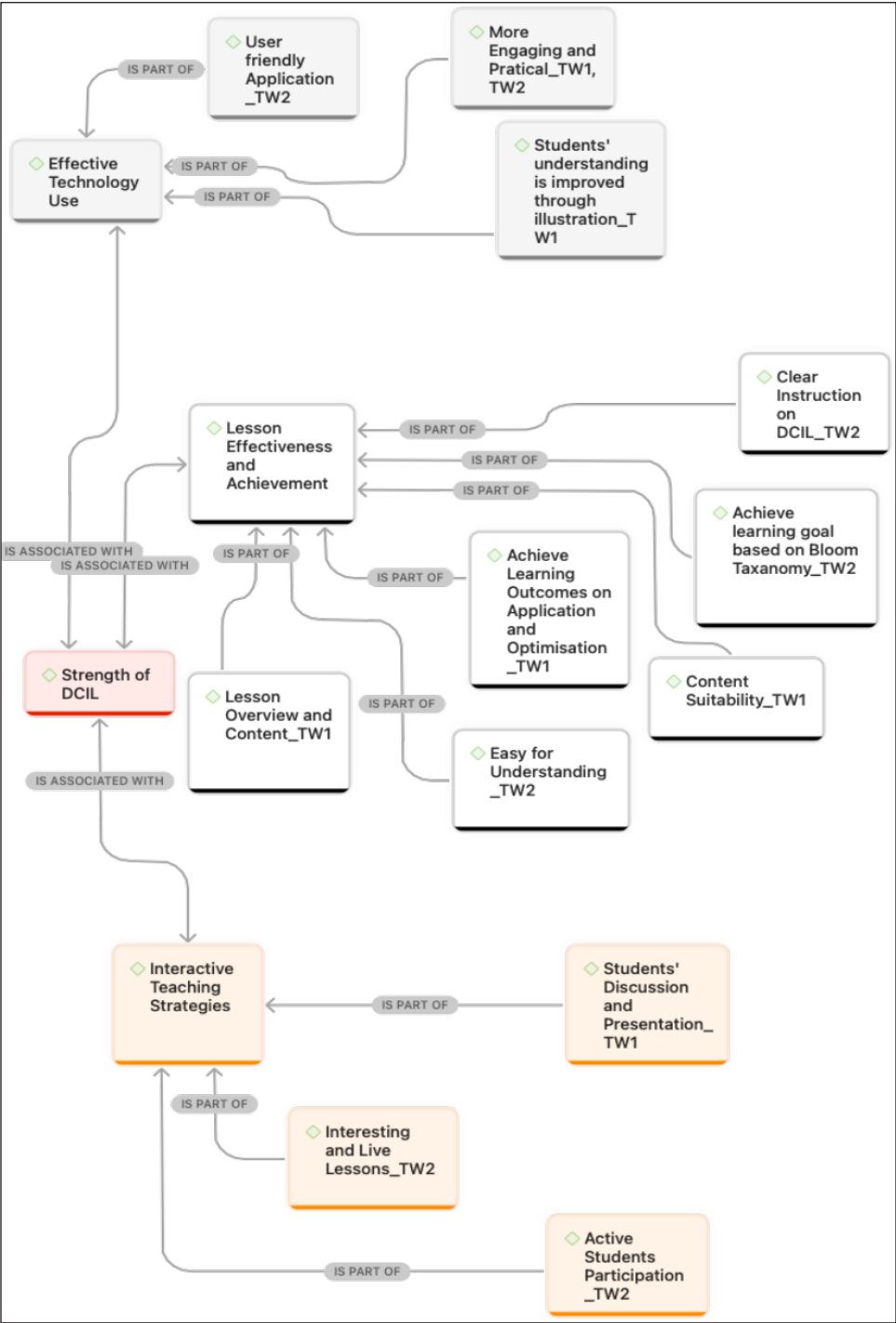
Figure 1. The strengths of the DCIL

content is suitable (Interview L2_TW1: 3-4).

Teaching Witness 1: We are able to achieve the lesson as well as the learning outcome, especially the differentiation offered in the mathematics syllabus in the foundation (Interview L2_TW1: 6).

Teaching Witness 2 expressed that the lessons were delivered exceptionally well, with an emphasis on clarity and ease of understanding.

Teaching Witness 2: Your syllabus is delivered very well and is easy to understand. (Interview L2_TW2: 21)

Furthermore, Teaching Witness 2 emphasised the effectiveness of the DCIL in attaining the lesson objectives, specifically within the framework of Bloom's Taxonomy, with a notable focus on its application in the field of differentiation topics.

Teaching Witness 2: This platform is also suitable for achieving our goals in Bloom's Taxonomy, particularly in the application of mathematics. The students were able to apply derivatives in practical contexts (Interview Overall_TW2: 10).

According to teaching witness 1, the success in quadratic and cubic graph matching highlighted a specific achievement within the DCIL lessons. The lesson content, focusing on optimisation techniques, required students to apply their knowledge in employing optimisation methods to determine maximum or minimum values.

Teaching Witness 1 positively highlighted that those students excelled in matching quadratic and cubic graphs, further emphasising the DCIL's effectiveness in delivering content with a practical and application-oriented approach.

Teaching Witness 1: ... they were able to match the cubic graph with the quadratic derivative (Interview L1_TW1: 66).

Teaching Witness 2 also acknowledged the clarity and helpfulness of the content. Specifically, the inclusion of concise notes with clear instructions was recognised as a significant contributor to the positive learning experience.

Teaching Witness 2: ... The content is quite interesting because, inside the instructional unit, short notes were provided with perfect instructions (Interview L3_TW2: 35)

The second strength of the designed DCIL lessons lies in their demonstration of the effective use of interactive teaching strategies. The integration of discussions, presentations, and student participation was specifically identified as a strength of the designed DCIL lessons. The use of Desmos allowed students to interactively draw, sketch, and manipulate graphs, adding a layer of interest and liveliness to the lessons. Teaching Witness 1 acknowledged the valuable discussions that occurred at the end of the session. These discussions not only facilitated student understanding but also actively engaged the students. Furthermore,

the presentation by one group became a vehicle for students to showcase their understanding of the materials, leading to increased confidence in presenting concepts before their peers.

Teaching Witness 1: Furthermore, the instructor provided some time for the students to discuss in a group, and then the students could present their ideas in front (Interview L4_TW1: 6).

Teaching Witness 1: At the end of the session, although we had limited time, at least one group was able to present their results.

Researcher: Yes.

Teaching Witness 1: I believe that through this session, the students would have understood more and could also build their confidence (Interview L3_TW1: 15-17).

Teaching Witness 2 also highlighted similar observations to those noted by Teaching Witness 1. The lessons actively promoted student involvement, allowing students to draw and sketch graphs during the session and submit their answers. Learning from their mistakes was facilitated as the instructor showcased solutions provided by all students.

Teaching Witness 2: ... Overall, it fulfils their learning needs by promoting engagement rather than just passive listening (Interview Overall_TW2: 6)

Teaching Witness 2: ...This feature encourages them to submit answers, learn from their mistakes, and enhance critical thinking (Interview Overall_ TW2: 8).

Another prominent feature of the designed DCIL lesson was the belief in the effectiveness of technology integration. According to Teaching Witness 1, using technology, including computers and the Desmos platform, proved to be an effective strategy in making the learning experience more engaging and practical compared to traditional methods like graph paper and pencils.

Teaching Witness 1: And the thing is a live thing because they were able to draw, to sketch, and they were also able to move the mouse here and there to see how the graph looks like, and so on.

Teaching Witness 1: Rather than just using graph paper or pencils to draw or imagine how the graph looks (Interview L2_TW1: 10 & 14).

Teaching Witness 1 noted an improvement in student understanding through the use of illustrations from Desmos. This integration significantly enhanced student comprehension and mastery of the subject matter. Because the method supplemented traditional instruction with diagrams and visual aids, students gained the ability to perform calculations and developed a deeper conceptualisation and visualisation of the underlying concepts.

Teaching Witness 1: I can see that it was very interactive because you included pictures inside the Desmos app. It had step-by-step pictures.

Researcher: Yes.

Teaching Witness 1: as well as diagrams. So, I believe the students would be more understanding because they could not only calculate but also imagine what was happening at the same time with the diagrams provided. (Interview L3_TW1: 9-11)

Teaching Witness 1: I believe that the diagrams and illustrations help the students understand the application of optimisation easily (Interview L4_TW1: 6).

Using illustrations enables students to understand the practical applications of optimisation with greater ease. Teaching Witness 2 repeated similar thoughts, noting that students could identify specific values of the function and trace the position of the derivative function using the Desmos platform. This resulted in enhanced problem-solving strategies, encompassing tasks such as maximising or minimising, understanding constants, and effectively drawing and labelling diagrams.

Teaching Witness 2: I find it useful to identify certain values of the function.

Researcher: Okay.

Teaching Witness 2: That's one of the first advantages. Another one is that

students can explain the process used to arrive at the solution, and they're able to trace the position of the derivative function.

Researcher: So, does this platform help them identify the derivative function?

Teaching Witness 2: Ah, yes (Interview L2_TW2: 5-9).

Teaching Witness 2: Yes, which means they can identify what to maximise or minimise, understand the constants, and know how to draw and label diagrams. (Interview L3_TW2: 11)

Weaknesses of DCIL Lesson

During the interview, both teaching witnesses highlighted several weaknesses in the designed Differential Calculus Instructional Lesson (DCIL) based on their assessment of the four teaching episodes. Figure 2 shows an analysis of the interview script that revealed three primary sub-themes encompassing these weaknesses: Content Overload and Time Constraints, Students' Difficulties in Understanding Differentiation Concepts, and Limited Feedback and Interaction on the Desmos platform.

According to Teaching Witness 1, the two-hour lesson might not provide sufficient time for students to fully understand and process the content, especially when matching graphs involving linear, quadratic, and cubic functions with their derivatives in Lesson 1.

Teaching Witness 1: But I notice that, perhaps, it is too much for the students
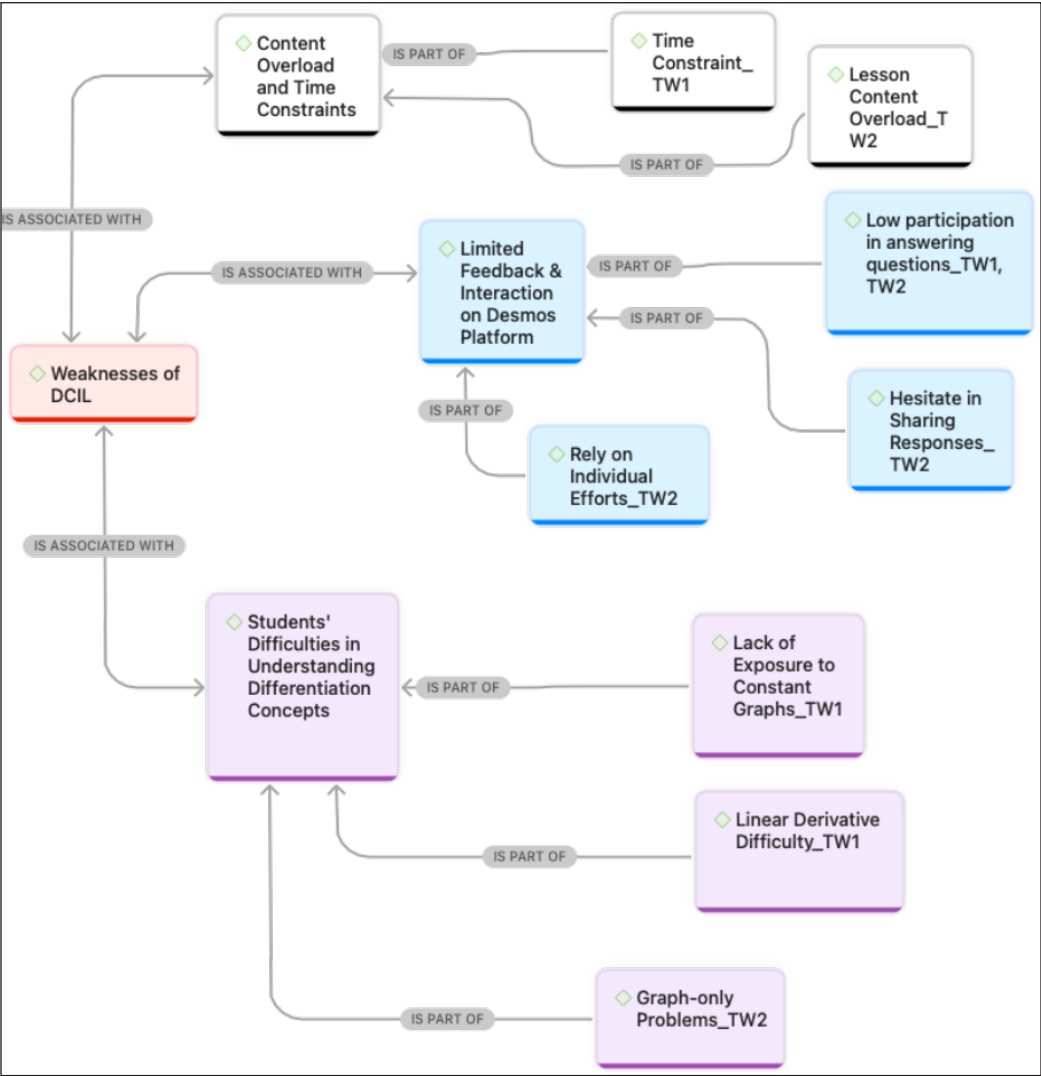
Figure 2. The weaknesses of the DCIL

to understand all of it in just one lesson (Interview L1_TW1: 16).

Teaching Witness 1: Um... the content is too much for them within the two-hour lessons (Interview L1_TW1: 18).

Teaching Witness 2 shared similar concerns about the need for students to have more time to complete the assigned task. She noted that part of the reason for this might be that the lesson contained too much information, particularly in terms of wordiness, making it challenging for students to comprehend.

Teaching Witness 2: ...They seem to understand your instructions, but

they need more time to solve them. (Interview L3_TW2: 15)

Teaching Witness 2: But there's too much information, too many words.

Researcher: Too much information?

Teaching Witness 2: Yes, it needs to be summarised (Interview L4_TW2: 20-22).

Several difficulties were identified related to students' understanding of the differentiation topic. In Lesson 1, Teaching Witness 1 observed that students encounter difficulties matching original and derivative graphs, particularly when dealing with linear graphs and their derivatives. The constant nature of linear derivatives was identified as a specific point of challenge.

Teaching Witness 1: It's (refer to the derivative of a linear graph) a constant. So, the graph will be in horizontal form.

Researcher: Yes.

Teaching Witness 1: So, for that part of the session, they have difficulty there.

Researcher: Oh… Okay.

Teaching Witness 1: They are a bit confused about this part (Interview L1_TW1: 28-32).

Teaching Witness 2 also discovered that students experienced initial shock when faced with graph-only problems, leading to confusion regarding how to approach tasks.

Teaching Witness 2: Yes, exactly. Because they seem confused at first when they see the graph only; they seem lost, not knowing what to do first (Interview L2_TW2: 25)

Another contributing factor was the lack of exposure to constant graphs in previous classes and lecture notes. This issue led to confusion among students, resulting in challenges when matching linear graphs with their horizontal derivatives.

Teaching Witness 1: Because we seldom expose them to the constant graph. We rarely presented the horizontal derivative graphs to the students (Interview L1_TW1: 58).

Regarding the third sub-theme of the weaknesses of this designed DCIL, which is referred to as limited feedback and interaction on the Desmos platform, both teaching witnesses emphasised the low participation from students, especially in voluntarily answering questions. They provided feedback indicating that only a few students actively participated in answering questions while others remained quiet, leading to uncertainty about their level of engagement.

Teaching Witness 1: Just now, I found out that some of the students were very quiet (Interview L2_TW1: 24).

Teaching Witness 1: Only a few of them answered the questions.

Researcher: Um um…

Teaching Witness 1: For the rest, we were not sure whether they were into the activities or if they understood, but they just preferred to keep quiet (Interview L2_TW1: 26-28).

Teaching Witness 2 pointed out that most groups tended to rely on individual efforts, neglecting the collaborative nature of the tasks. The introverted students exhibited reluctance to actively participate in discussions.

Teaching Witness 2: Yes, introverted students seem less inclined to engage in group discussions. While the platform suits introverted students, it also poses a disadvantage as they may prefer solving problems individually rather than discussing solutions with their peers (Interview OVERALL_TW2: 12)

Teacher Witness 2 also noticed that some students hesitated in submitting their answers, indicating a potential challenge in active participation.

Teaching Witness 2: … Some students seem afraid to submit their answers immediately. They were just quiet at first (Interview L1_TW2: 17).

Suggested Improvements for DCIL Lesson

From the interview, the teaching witnesses provided feedback on the lessons and suggested improvements for better interaction, aiming to enhance the designed Differential Calculus Instructional Lessons (DCIL). After conducting theme analysis, two sub-themes emerged: Students' Engagement and Interaction Enhancement and Enhancement on Desmos for Better Teaching Practice. Figure 3 shows the connection between the emerged codes and categories.

Teaching Witness 2 recommended that only the group leader should have access to submit answers in group activities to encourage other group members to focus on discussion, thereby increasing students' active participation.

Teaching Witness 2: Okay, for this lesson, regarding the group activity, I think it's better if only the leader of a group can access and submit the answers because some groups seemed uncomfortable with the discussion.

Teaching Witness 2: Exactly. The group members just need to give the answers or share their ideas (Interview L2_TW2: 13&17)

Teaching Witness 1 emphasised that student participation is influenced by attitudes, suggesting the creation of smaller group interactions and problem-solving discussions to foster more active engagement.

Teaching Witness 1: The maximum is 20; having 15 to 20 students in one class is good enough.

Researcher: Oh, okay.
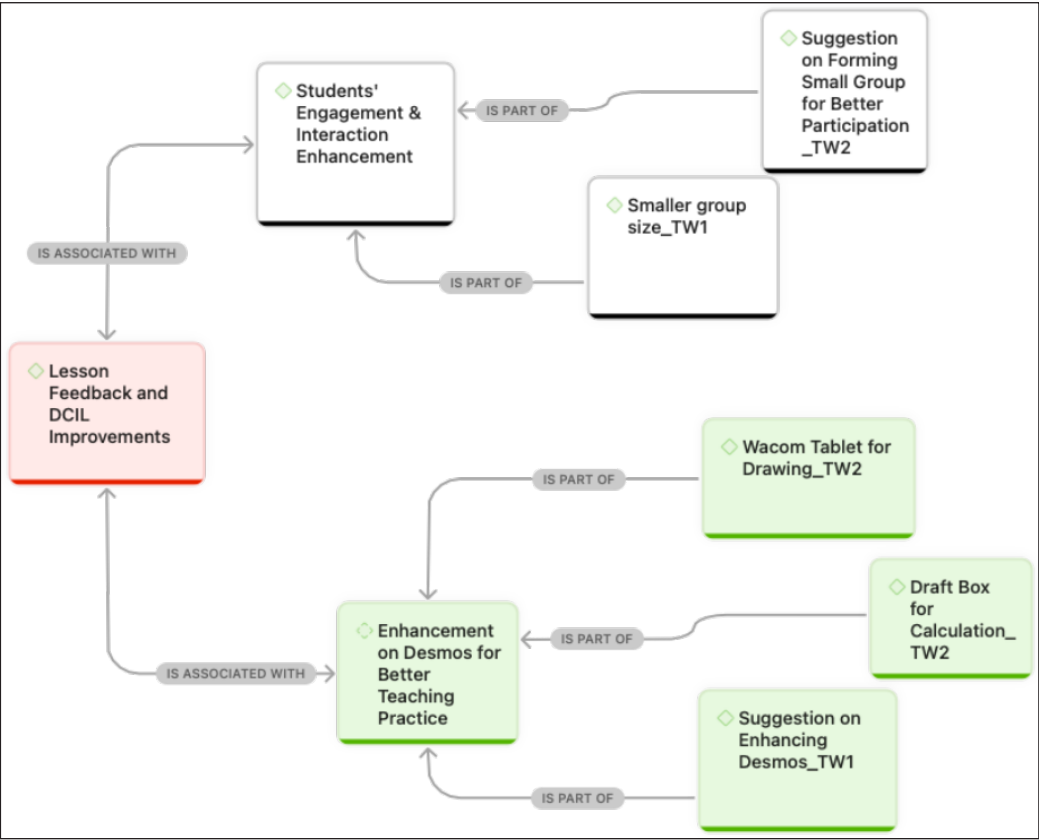
Figure 3. The teaching witnesses' feedback on DCIL

Teaching Witness 1: It's also easier for you to monitor their progress (Interview Overall_TW1: 132-136).

Additionally, Teaching Witness 1 recommended further enhancements to Desmos to improve teaching practices. She proposed integrating a blank whiteboard or digital paper feature to facilitate side-by-side teaching and calculations.

Teaching Witness 1: Erm… I'm not sure whether it can be done or not. Maybe there are other features that we can add to Desmos, such as a blank whiteboard or blank paper.

Researcher: Okay…

Teaching Witness 1: We can arrange it in a side-by-side view, with what you are currently teaching on one side and another view for the whiteboard or the blank screen (Interview Overall_TW1: 84-88).

On the other hand, Teaching Witness 2 suggested providing a draft box on Desmos for students to calculate and work on their answers before submission, aiming to reduce hesitancy and improve the quality of responses. She also recommended using a Wacom tablet instead of a mouse to draw

on the Desmos platform and enhance student interest.

Teaching Witness 2: It would be better to have a draft box for students to calculate and work on their answers before submitting them.

Some students seem afraid to submit their answers immediately. They were just quiet at first (Interview L1_TW2: 15&17).

Teaching Witness 2: Also, I suggest using a Wacom tablet for drawing.

Researcher: Ah, okay.

Teaching Witness 2: Because students seem more interested when using a tablet rather than a mouse or whiteboard (Interview L3_TW2: 31-33).

DISCUSSION

The insights derived from interview sessions with two teaching witnesses provided valuable perspectives on the strengths and weaknesses and suggested improvements in the designed Differential Calculus Instructional Lessons (DCIL) to enhance student understanding of derivative concepts and their applications to curve properties. Addressing these identified weaknesses through targeted instruction and modifications to the instructional lessons is expected to contribute to a more accurate and comprehensive understanding of derivative concepts among students.

This outcome was significant, as the previous research review (Bukhatwa et al., 2022; Wang & Hannafin, 2005) has shown that most studies primarily focused on the impact or effectiveness of implementing mathematics-related technologies in schools. This study, however, considered other factors that could contribute to the enhancement of instructional lessons or materials. Thus, it was crucial to incorporate feedback from course lecturers in this study to achieve the desired learning goals.

Findings revealed that the instructional lessons discussed in the papers exhibited several strengths in terms of lesson effectiveness and achievement, interactive teaching strategies, and effective technology use. Teaching Witness 2 emphasised the importance of responsive interactions between students and instructors, emphasising active engagement, feedback provision, and addressing individual needs. This effective instructional feature aligned with the findings of Rolf and Slocum (2021), highlighting that interactive engagement between instructors and students was a key element. Moreover, the study emphasised that effective technology integration enhanced instruction provided alternative assessment methods, and facilitated teacher productivity. Gillani and the collaborators (2008) stated that instructional lessons incorporating technology made instruction more effective, understandable, and meaningful.

According to teaching witnesses, students showed a deficient concept image of the graphical concept, particularly when matching a linear function with its

derivative. Although they could compute the derivative of a linear function correctly, they often struggled to recognise and correctly map the horizontal line as the derivative of the linear function. These underdeveloped concept images of the graph shapes led to their conceptual errors (Makonye & Luneta, 2014; Tall & Vinner, 1981).

The instructional observations provided by teaching witnesses highlighted certain weaknesses, such as content overload, time constraints, and limited feedback and interaction on the Desmos platform. Consequently, recommendations were made to enhance instructional design, emphasising student engagement and interaction on Desmos for improved teaching practices.

To address content overload and time constraints in the teaching and learning of mathematics, Keiser and Lambdin (1996) proposed the integration of cooperative learning and problem-solving activities to foster student interaction and engagement. Teaching witnesses in this study also suggested flexible group work presentations, allowing selected groups to present or designating the group leader for answer submission while others focused on group discussions. These recommendations aligned with the importance of flexibility in class scheduling, particularly when implementing innovative teaching methods, such as group work and alternative forms of assessment (Soluk et al., 2022).

Furthermore, strategies to enhance engagement and interaction in the calculus classroom were explored. Cablas (2023) advocated for interactive teaching practices, including purposeful questioning and feedback, known to facilitate interactive learning and increase teacher facilitation and student engagement. The research highlighted that the incorporation of technology in learning environments contributed to increased student engagement, as suggested by Shé, Bhaird, and Fhloinn (2023). Therefore, instructors were urged to fully utilise the Desmos platform, which allowed for visual representations of functions and equations, personalised learning through the teacher dashboard, and immediate feedback (Chorney, 2021; Gulli, 2021). Additionally, sharing anonymous student answers in the classroom through the teacher dashboard in the Desmos platform could enhance engagement and interaction, fostering active participation in problem-solving functions and calculus (Chechan et al., 2023; Liang, 2016). Integration of these strategies enabled educators to create a dynamic and interactive learning environment that enhanced students' engagement and interaction in the calculus classroom.

CONCLUSION

This study adds to the existing literature by offering detailed analyses personalised to design-based research. This study highlighted the importance of teacher witnesses' active participation and contribution to design research to enhance teaching practices and students' learning experiences. The analysis of teaching witnesses during the interview sessions yielded valuable insights for real-time feedback into instructional design and future

improvements in the designed instructional lessons for teaching derivative concepts. It highlighted the strengths and weaknesses of the instructional design and offered suggestions for improvement. Consequently, the findings suggest that integrating teaching witnesses can lead to more responsive and effective educational practices, thereby enriching the theoretical implications of DBR in mathematics education.

The limitation of this study is that it relied solely on qualitative interview data to explore the strengths and weaknesses of the designed DCIL and on the analysis of feedback forms provided by the two teaching witnesses to quantify and validate the intervention. This narrow scope restricts the study's conclusions to the specific context in which it was conducted or similar contexts with comparable syllabi. Consequently, the outcomes may not be generalisable to other contexts. However, it does provide a detailed and insightful description derived from the study's context. A recommendation for future study is to include the exploration of students' feedback, as design-based research centres around studying student learning, with their feedback playing a crucial role in instructional design. Furthermore, a longitudinal study involving an additional cycle of teaching experiments in design-based research (DBR) could be conducted to investigate the long-term effects of instructional changes. Additionally, incorporating quantitative methods, such as statistical analyses of student performance in later cycles of DBR, could effectively assess the impact of the designed DCIL on students' outcomes in differential calculus.

REFERENCES

Arango, J., Gaviria, D., & Valencia, A. (2015). Differential calculus teaching through virtual learning objects in the field of management sciences. *Procedia - Social and Behavioral Sciences*, *176*, 412-418. https://doi.org/10.1016/j.sbspro.2015.01.490

Aspinwall, L., Shaw, K. L., & Presmeg, N. C. (1997). Uncontrollable mental imagery: Graphical connections between a function and its derivative. *Educational Studies in Mathematics*, *33*(3), 301-317. https://doi.org/10.1023/a:1002976729261

Bakker, A., & van Eerde, D. (2015). Chapter 16: An introduction to design-based research with an example from statistics education. In A. Bikner-Ahsbahs, C. Knipping, & N. Presmeg (Eds.), *Approaches to qualitative research in mathematics education* (pp. 429-466). Springer. https://doi.org/10.1007/978-94-017-9181-6_16

Bakri, S. R. A., Liew, C. Y., Chen, C. K., Tuh, M. H., & Ling, S. C. (2020). Bridging the gap between the derivatives and graph sketching in Calculus: An innovative game-based learning approach. *Asian Journal of University Education*, *16*(4), 121-136. https://doi.org/10.24191/ajue.v16i4.11962

Bedada, T. B., & Machaba, M. F. (2022). Investigation of student's perception learning calculus with GeoGebra and cycle model. *Eurasia Journal of Mathematics, Science and Technology Education*, *18*(10), Article em2164. https://doi.org/10.29333/ejmste/12443

Bibi, A., Ahmad, M., Shahid, W., Zamri, S. N. S., & Abedalaziz, N. A. M. (2019). An evolving research to tackle teaching and learning

challenges during differential equations course: A combination of non-routine problems and teacher training. *International Electronic Journal of Mathematics Education*, *14*(3), 647-656. https://doi.org/10.29333/iejme/5777

Block, B.-M., & Mercorelli, P. (2015). Conceptual understanding of complex components and Nyquist-Shannon sampling theorem: A design based research in Engineering. In *2015 IEEE Global Engineering Education Conference* (pp. 462-470). IEEE. https://doi.org/10.1109/EDUCON.2015.7096011

Bogdan, R., & Biklen, S. K. (2007). *Qualitative research for education: An introduction to theory and methods.* Pearson A & B.

Borji, V., Font, V., Alamolhodaei, H., & Sánchez, A. (2018). Application of the complementarities of two theories, APOS and OSA, for the analysis of the university students ' understanding on the graph of the function and its derivative. *Eurasia Journal of Mathematics, Science and Technology Education*, *14*(6), 2301-2315. https://doi.org/10.29333/ejmste/89514

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77-101. https://doi.org/10.1191/1478088706qp063oa

Brijlall, D., & Ndlazi, N. J. (2019). Analysing engineering students' understanding of integration to propose a genetic decomposition. *Journal of Mathematical Behavior*, *55*, Article 100690. https://doi.org/10.1016/j.jmathb.2019.01.006

Bukhatwa, B., Al Ruqeishi, E. N. A., & Al Khamisi, F. M. H. (2022). The usefulness of technology-based interactive methods in teaching mathematics and statistics at the college level. *Shanlax International Journal of Education*, *10*(3), 30-40. https://doi.org/10.34293/education.v10i3.4627

Bungum, B., & Sanne, A. (2021). Conditions for the active involvement of teachers in a design-based research project. *Designs for Learning*, *13*(1), 44-54. https://doi.org/10.16993/dfl.169

Cablas, J. C. (2023). The flipped classroom: Enhancing students' learning in teaching calculus. *International Journal of Multidisciplinary: Applied Business and Education Research*, *4*(6), 2014-2022. https://doi.org/10.11594/ijmaber.04.06.26

Chechan, B., Ampadu, E., & Pears, A. (2023). Effect of using Desmos on high school students' understanding and learning of functions. *Eurasia Journal of Mathematics, Science and Technology Education*, *19*(10), Article em2331. https://doi.org/10.29333/ejmste/13540

Chorney, S. (2021). Classroom practice and craft knowledge in teaching mathematics using Desmos: challenges and strategies. *International Journal of Mathematical Education in Science and Technology, 53*(12), 3203-3227. https://doi.org/10.1080/0020739X.2021.1931974

Cobb, P., Confrey, J., Disessa, A., Lehrer, R., & Schauble, L. (2003). Design experiments in educational research. *Educational Researcher*, *32*(1), 9-13. https://doi.org/10.3102/0013189X032001009

Fatimah, S., & Yerizon. (2019). Analysis of difficulty learning calculus subject for mathematical education students. *International Journal of Scientific and Technology Research*, *8*(3), 80-84.

Fitriani, Umar, K., Pasaribu, F., Novitasari, W., Samosir, B. S., & Yusmiati. (2023). Analysis of difficulty understanding student Mathematica by using online learning model. *KnE Social Sciences*, 180-187. https://doi.org/10.18502/kss.v8i4.12898

Gillani, S. N., Gujjar, A. A., & Choudhry, B. N. (2008). The use of instructional design in educational technology for effective teaching and learning. *Journal on School Educational Technology*, *3*(3), 49-56. https://doi.org/10.26634/jsch.3.3.736

Goff, W. M., & Getenet, S. (2017). Design-based research in doctoral studies: Adding a new dimension to doctoral research. *International*

Journal of Doctoral Studies, *12*, 107-121. https://doi.org/10.28945/3761

Gulli, C. (2021). Technology in teaching mathematics: Desmos. *Proceedings of GREAT Day*, *2020*(1), Article 8. https://knightscholar.geneseo.edu/proceedings-of-great-day/vol2020/iss1/8

Haghjoo, S., & Reyhani, E. (2021). Undergraduate basic sciences and engineering students' understanding of the concept of derivative. *Journal of Research and Advances in Mathematics Education*, *6*(4), 277-298. https://doi.org/10.23917/jramathedu.v6i4.14093

Hamda, H., Arwadi, F., Sukarna, S., & Syam, R. (2020). Instructional design of multivariable calculus course using Toulmin argument model to increase the understanding of students. *ICLIQE 2020: Proceedings of the 4th International Conference on Learning Innovation and Quality Education*, Article 47. https://doi.org/10.1145/3452144.3453751

Hamid, H. A., Tapsir, R., Shah, R. L. Z. R. M., Salleh, F. Z., Mustaffa, N., Lakim, K. H., & Sayed Abdulhamid, S. R. (2021). Pre-university students' conceptual understanding of functions and derivatives through graphical reasoning. *Review of International Geographical Education Online*, *11*(4), 1013-1022.

Haryani, F., & Hamidah, A. S. (2022). Exploring the impact of technology-integrated mathematics worksheet in the teaching and learning during Covid-19 pandemic. *Mathematics Teaching Research Journal*, *14*(3), 39-59. https://files.eric.ed.gov/fulltext/EJ1361559.pdf

Hashemi, N., Kashefi, H., & Abu, M. S. (2020). The emphasis on generalization strategies in teaching integral: Calculus lesson plans. *Sains Humanika*, *12*(3), 35-43. https://doi.org/10.11113/sh.v12n3.1687

Hitt, F., & Dufour, S. (2021). Introduction to calculus through an open-ended task in the context of speed: representations and actions by students in action. *ZDM - Mathematics Education, 53*(3), 635-647. https://doi.org/10.1007/s11858-021-01258-x

Jamaludin, A. (2016). *Modul motivasi diri* [Self-motivation module]. Dewan Bahasa dan Pustaka.

Jones, S. R., & Watson, K. L. (2018). Recommendations for a "target understanding" of the derivative concept for first-semester calculus teaching and learning. *International Journal of Research in Undergraduate Mathematics Education*, *4*, 199-227. https://doi.org/10.1007/s40753-017-0057-2

Keene, K. A., Hall, W., & Duca, A. (2014). Sequence limits in calculus: Using design research and building on intuition to support instruction. *ZDM Mathematics Education*, *46*(4), 561-574. https://doi.org/10.1007/s11858-014-0597-8

Keiser, J. M., & Lambdin, D. V. (1996). The clock is ticking: Time constraint issues in mathematics teaching reform. *The Journal of Educational Research*, *90*(1), 23-31. https://doi.org/10.1080/00220671.1996.9944440

Kennedy-Clark, S. (2013). Research by design: Design-based research and the higher degree research student. *Journal of Learning Design*, *6*(2), 26-32. https://doi.org/10.5204/jld.v6i2.128

Koller, V., Harvey, S., & Magnotta, M. (2008). *Technology-based learning strategies.* Social Policy Research Associates.

Kwon, O. N., Bae, Y., & Oh, K. H. (2015). Design research on inquiry-based multivariable calculus: Focusing on students' argumentation and instructional design. *ZDM Mathematics Education*, *47*(6), 997-1011. https://doi.org/10.1007/s11858-015-0726-z

Liang, S. (2016). Teaching the concept of limit by using conceptual conflict strategy and Desmos graphing calculator. *International Journal of Research in Education and Science*, *2*(1), 35-48. https://doi.org/10.21890/ijres.62743

Lu, J. C. C. (2023). Using YouTube as an effective educational tool to improve engineering mathematics teaching during the COVID-19

pandemic. *Engineering Proceedings*, *38*(1), Article 24. https://doi.org/10.3390/engproc2023038024

Makgakga, S., & Makwakwa, E. G. (2016). Exploring learners' difficulties in solving grade 12 differential calculus: A case study of one secondary school in Polokwane district. In *ISTE International Conference on Mathematics, Science and Technology Education* (pp. 13-25). Unisa Press. http://hdl.handle.net/10500/22899

Makonye, J. P., & Luneta, K. (2014). Mathematical errors in differential calculus tasks in the Senior School Certificate Examinations in South Africa. *Education as Change*, *18*(1), 119-136. https://doi.org/10.1080/16823206.2013.847014

Malaysian Qualifications Agency. (2019). *Guidelines of Curriculum: Foundation (GCF)*. https://www2.mqa.gov.my/qad/GGP/2019/MQA%20GCF%20FINAL%2027.5.2019%20edited%20(1)_Clean.PDF

Mariano, D. L. F., Barsana, J. G., Dimaculangan, K. A. C., Flores, L. A., Parto, F., Mariano, O. G., & Elipane, L. (2021). Lesson study: A tool for an improved instructional design in teaching integration by parts. *Turkish Journal of Computer and Mathematics Education*, *12*(3), 3862-3869.

Mcgee, D. L., & Moore-Russo, D. (2015). Impact of explicit presentation of slopes in three dimensions on students' understanding of derivatives in multivariable calculus. *International Journal of Science and Mathematics Education*, *13*, 357-384. https://doi.org/10.1007/s10763-014

McKim, C. (2023). Meaningful member-checking: A structured approach to member-checking. *American Journal of Qualitative Research*, *7*(2), 41-52.

Meiliasari, M., Wijayanti, D. A., & Azima, L. A. (2021). An error analysis of students' difficulties in differential calculus. *Journal of Medives :*

Journal of Mathematics Education IKIP Veteran Semarang, *5*(1), 48-60. https://doi.org/10.31331/medivesveteran.v5i1.1433

Melnick, S. A., & Meister, D. G. (2008). A comparison of beginning and experienced teachers' concerns. *Educational Research Quarterly, 31*(3), 40-56.

Molina, M., Castro, E., & Castro, E. (2007). Teaching experiments within design research. *The International Journal of Interdisciplinary Social Sciences: Annual Review*, *2*(4), 435-440. https://doi.org/10.18848/1833-1882/CGP/v02i04/52362

Norton, A. H., & McCloskey, A. (2008). Teaching experiments and professional development. *Journal of Mathematics Teacher Education*, *11*(4), 285-305. https://doi.org/10.1007/s10857-008-9076-x

Ojo, A., & Olanipekun, P. (2023). Examining students' concept images in mathematics: The case of undergraduate calculus. *Voice of the Publisher, 9*(4), 242-256. https://doi.org/10.4236/vp.2023.94019

Othman, Z. S. B., Khalid, A. K., & Mahat, A. B. (2018). Students' common mistakes in basic differentiation topics. *AIP Conference Proceedings*, *1974*(1), Article 050009. https://doi.org/10.1063/1.5041709

Pramesti, N., & Dewi, L. (2023). The implementation of understanding by design approach in mathematics learning on elementary school. *Journal of Innovative Mathematics Learning*, *6*(2), 124-131. https://doi.org/10.22460/jiml.v6i2.16304

Rashidi, M. N., Begum, R. A., Mokhtar, M., & Pereira, J. J. (2014). The conduct of structured interviews as research implementation method. *Journal of Advanced Research Design*, *1*(1), 28-34.

Rolf, K. R., & Slocum, T. A. (2021). Features of direct instruction: Interactive lessons. *Behavior Analysis in Practice*, *14*, 793-801. https://doi.org/10.1007/s40617-021-00613-4

Salinas, P., Quintero, E., & Fernández-Cárdenas, J. M. (2016). Fostering dialogue in the calculus classroom using dynamic digital technology. *Digital Experiences in Mathematics Education*, *2*(1), 21-49. https://doi.org/10.1007/s40751-016-0013-9

Setiawan, A. A. (2022). Instructional design: Teaching algebraic equations to grade 8 students with involvement of mathematical reasoning in Cambridge IGCSE curriculum. *Journal of Instructional Mathematics*, *3*(1), 1-15. https://doi.org/10.37640/jim.v3i1.1035

Shahid, I., Beek, A. Van, & McCahan, S. (2022). Observing instructor behaviour in an active learning classroom: A case study of an undergraduate calculus course. *Proceedings 2022 Canadian Engineering Education Association (CEEA-ACEG22) Conference*. Paper 68.

Shé, C. N., Bhaird, C. M. an, & Fhloinn, E. (2023). Factors that influence student engagement with technology-enhanced resources for formative assessments in first-year undergraduate mathematics. *International Journal of Mathematical Education in Science and Technology, 55*(10), 2670-2688. https://doi.org/10.1080/0020739X.2023.2182725

Shé, C. N., Fhloinn, E., & Bhaird, C. M. an. (2023). Student engagement with technology-enhanced resources in mathematics in higher education: A review. *Mathematics*, *11*(3), Article 787. https://doi.org/10.3390/math11030787

Smith, T. W., & Strahan, D. (2004). Toward a prototype of expertise in teaching : A descriptive case study. *Journal of Teacher Education*, *55*(4), 357-371. https://doi.org/10.1177/0022487104267587

Soluk, P., Greenwood-Lee, J., Peschke, J., Beltaos, A., Kumar, V., Muniykwa, K., Babiuk, S., & Zenteno, S. (2022). Building educational resilience in mathematics delivery and assessment (Working paper). In *Pan-Commonwealth Forum 10 (PCF10), 2022*. Commonwealth of Learning. https://doi.org/10.56059/pcf10.616

Steffe, L. P., & Thompson, P. W. (2000). Teaching experiment methodology underlying principles and essential elements. In A. E. Kelly & R. A. Lesh (Eds.), *Research design in mathematics and science education* (pp. 267-307). Routledge. https://doi.org/10.4324/9781410602725

Stephan, M. L. (2015). Conducting classroom design research with teachers. *ZDM - Mathematics Education*, *47*, 905-917. https://doi.org/10.1007/s11858-014-0651-6

Tall, D., & Vinner, S. (1981). Concept image and concept definition in mathematics with particular reference to limits and continuity. *Educational Studies in Mathematics*, *12*, 151-169. https://doi.org/10.1007/BF00305619

The Design-Based Research Collective. (2003). Design-based research: An emerging paradigm for educational inquiry. *Educational Researcher*, *32*(1), 5-8. https://doi.org/10.3102/0013189X032001005

Thomas, D. R. (2017). Feedback from research participants: Are member checks useful in qualitative research? *Qualitative Research in Psychology*, *14*(1), 23-41. https://doi.org/10.1080/14780887.2016.1219435

Wagner, E. R., Orme, S. M., Turner, H. J., & Yopp, D. (2017). Encouraging example generation: A teaching experiment in first-semester calculus. *Problems, Resources and Issues in Mathematics Undergraduate Studies*, *27*(2), 212-234. https://doi.org/10.1080/10511970.2016.1194340

Wang, F., & Hannafin, M. J. (2005). Design-based research and technology-enhanced learning environments. *Educational Technology Research and Development*, *53*(4), 5-23. https://doi.org/10.1007/BF02504682

SOCIAL SCIENCES & HUMANITIES

Breaking the School-to-Jail Pipeline in Malaysia: Challenges in Leading a Horse to Water and Drink for Itself

Ahmad Thamrini Fadzlin Syed Mohamed*, Jowati Juhary and Erda Wati Bakar

Language Centre, Universiti Pertahanan Nasional Malaysia, Kem Sungai Besi, 57000 Kuala Lumpur, Malaysia

ABSTRACT

This study extensively examines the education of incarcerated youth at Henry Gurney School, aiming to comprehend prevalent challenges and propose forward-thinking improvements to the current system. While institutionalisation is recognised for its role in curbing misbehaviour, persistent concerns revolve around its potential to displace and reinforce disruptive behaviour among young convicts, posing enduring threats to social security. The research underscores critical issues by employing a comprehensive approach involving interviews, observation, and archival data analysis: A shortage of qualified personnel, collaboration between government and private sectors, and the importance of creating conducive spaces for education and vocational training. The study accentuates the urgent need for concerted efforts from various stakeholders to dismantle the school-to-prison pipeline, thereby reducing recidivism among youth in Malaysia. The implications for theory and practice underscore the imperative for educational programs that nurture independent, self-motivated individuals striving for personal improvement.

Keywords: Challenges in rehabilitation, correctional institution, delinquency, ethnography, Henry Gurney School, incarcerated youth education, school-to-prison pipeline

INTRODUCTION

An essential aspect of rehabilitating convicted child offenders is an excellent intervention and re-education programme that could reduce recidivism (Abrams & Franke, 2013; Awal et al., 2021; Chung et al., 2011; Hashim et al., 2019; Hussin, 2007; Iwatsuki, 2019; Kennedy, 2013; Little, 2015; McCray et al., 2018; Miyaguchi et al., 2012; Nicklin, 2017; Pauzi et al., 2016; Rafedzi & Abrizah, 2016; Reed & Wexler, 2014;

Sander et al., 2011; Schaeffer et al., 2014; Strnadová et al., 2017; Taib, 2012). The Malaysian Penal Code and the Malaysian Child Act (2001) govern children's criminal acts in Malaysia. Based on these legal decrees, a 'child' is those below the age of 18, and if arrested, detained, and tried for any offence, they will not be subjected to the standard legal procedures applicable to adults (Hassan et al., 2020; Hussin, 2007; Nong & Yusoff, 2015, 2019; Rahim et al., 2015; Ramli, 2021; Samuri et al., 2013). Under the ruling and jurisdiction of the Court for Children (Md Salleh, 2007; Rahim et al., 2015; Ramli, 2021; Samuri et al., 2013), convicted child offenders can be sent to a prescribed rehabilitation institution, either to a closed institution, such as Henry Gurney School (HGS) or Approved Schools under the administration and management of the Prisons Department or an open institution, such as probation hostels (for example, *Asrama Akhlak)* or places of refuge (for example, *Taman Seri Puteri*) under the Department of Social Welfare (Nong & Yusoff, 2015, 2019; Samuri et al., 2013; Taib, 2012).

In addition, the two legal documents also mandated the rights of convicted children to obtain appropriate access and support facilities to national education and training. The law is as required and stipulated by international conventions such as the United Nations Convention on the Rights of the Child (C.R.C.), United Nations Basic Principles for the Treatment of Prisoners, Beijing Rules, Mandela Rules, and United Nations Rules for the Protection

of Juveniles Deprived of their Liberty (J.D.L.) to guarantee their sustenance after they have completed their sentence (Awal et al., 2021; Hussin, 2007; Md Salleh, 2007; Pauzi et al., 2016; Tharshini et al., 2021). The responsibility is shouldered by various related departments, including the Prisons Department, the Department of Social Welfare, and the Ministry of Education, to meet these standards. These departments provide ample educational opportunities and support for institutionalised children and young people in Malaysia, enabling them to be better individuals after release (Taib, 2012). Within the interest of this study, there are currently three HGS in Malaysia, namely HGS Telok Mas, Melaka, HGS Kota Kinabalu, Sabah (Girls), and HGS II Keningau, Sabah, and HGS Puncak Borneo Siburan, Sarawak under the management of the Prisons Department, Malaysia (PDM; Ariffin & Zailani, 2021).

Questions remain if child offenders sent to rehabilitation institutions are in danger of being sidelined from acquiring comprehensive academic education as they are isolated from schools, families, and communities where they can find support for success (Van Vleet, 1999; Leone & Cutting, 2004). Based on data from the Department of Statistics Malaysia (Table 1), many cases involving children have been observed from 2014 until 2019. The increase in re-offending cases that may undermine the current educational approaches currently enforced at institutions responsible for rehabilitating these young people is alarming. Studies by Dawkins and Sorensen (2015) and Amani

et al. (2018) warn that residential placement may not effectively reduce recidivism while aggravating more violent offences among institutionalised young offenders. Although the numbers suggest a small number of recidivists among convicted children, the rising trend indicates the emergence of the 'school-to-prison pipeline' (James, 2011; Seroczynski & Jobst, 2016; Wald & Losen, 2003) in Malaysia. Furthermore, recent studies have confirmed the worrying situation of juvenile uprising cases. Rahim et al. (2015) reported that based on police statistics, a whopping 57% increase in cases involving children from 2012 to 2013 had been recorded. Another study mentioned a cumulative growth of 30.8% in cases involving children from 2009 to 2013 (Pung et al., 2015). The increase can be further linked to the surging number of young individuals locked at institutions under the Malaysian Prison Department from 2015 until 2019 (Table 2).

According to Budin (2014), less is known about such institutions in Malaysia as they are well-guarded and secluded from the general population. The absence of a strategic plan at a national level to accommodate these juveniles in the Malaysia Education Blueprint 2013–2025 is

tangible evidence that the education issue for juveniles has often been controversial and neglected by the larger education community (Leone & Cutting, 2004). Focusing more on the 'normal' students, those deemed "uneducable," a social label described by Brewer et al. (1998) as being "hopeless and helpless" for their involvement in social problems, are at risk socially, emotionally, psychologically, and only obtain inadequate educational opportunities (McCray et al., 2018). Consequently, very little is known about the challenges faced by rehabilitation institutions in Malaysia that underpin a successful academic-based rehabilitation process.

Researchers in Malaysia have yet to treat education for incarcerated children in detail. Taib (2012) argued that empirical

Table 2
Young individuals locked at institutions under the management of the Malaysian Prison Department (2015-2019)

	HGS	RC
2015	1,146	1,361
2016	1,140	1,434
2017	1,292	1,889
2018	1,417	1,971
2019	1,569	2,268

Note. HGS = Henry Gurney School; RC = Rehabilitation Centres

Table 1
Number of cases involving children in Malaysia (2014-2019)

	2014*	2015*	2016	2017*	2018*	2019*
First offence	4725	4152	n/a	4952	4619	4248
Repeated offence	371	417	n/a	491	675	585
Total	5096	4569	n/a	5443	5294	4833

Note. *Department of Statistics Malaysia; n/a = Not Available

studies investigating the challenges faced by the PDM in implementing educational programmes within prison institutions in Malaysia are still lacking. Research on the subject has been mostly restricted to limited comparisons of the legal aspects of children in conflict with the law (Samuri et al., 2013), the physical and psychological impact of incarceration (Nasir et al., 2010), factors influencing the effectiveness of rehabilitation programmes (Hassan & Mokhtar, 2018; Mohammad & Azman, 2018), constraints in delivering good educational programmes (Rafedzi & Abrizah, 2016), and alternative rehabilitation or educational approaches that could be used at rehabilitation institutions (Azam et al., 2021). Topics less prominently discussed in the correctional education research literature include a holistic curriculum integrating general academic, vocational, life-skill, health, and interpersonal learning.

Nong and Yusoff (2015, 2019) maintained that Malaysian legislators' approaches to juvenile justice seemed to prioritise punitive measures compared to restorative justice or diversion alternatives such as supervision, family-based care, or being placed under the care of a fit person, thus endangering the children's future. Nevertheless, this practice is not isolated only to Malaysia but is also evident worldwide (Atilola, 2013; Van Vleet, 1999). Several studies have suggested institutionalisation is the most effective approach for preventing future misbehaviour. This method isolates individuals from harmful external influences and enhances self-control through the disciplinary and spiritual programs offered at the rehabilitation institution (Nong & Yusoff, 2019; Ramli, 2021; Samuri et al., 2013). The institution placement may further displace these young convicts, reinforce their disruptive behaviour, and endanger the nation's social security in the long run (Hashim et al., 2019; Nong & Yusoff, 2019).

Considering the abovementioned limitations, the present study examined the existing practice in educating incarcerated children at HGS Telok Mas, Melaka (HGSTM). Suggestions and recommendations have been proposed for the improvements needed to minimise the number of dropouts by focusing on the educational challenges the institution faces, thus promoting positive social reintegration among incarcerated children. Hence, the study addresses the following questions:

(a) How are children in conflict with the law being educated at HGSTM?
(b) What are the current educational challenges that HGSTM is facing?
(c) How can the current educational approach at HGSTM be further improved?

As this study focuses on child offenders under PDM management, the discussion is limited to PDM and HGSTM. The outcome of this study may play an essential role in developing committed human capital that decreases the number of crimes and recidivism, thus improving society's quality of life.

LITERATURE REVIEW

Rehabilitation Theory: Serving Juvenile Learners

'Rehabilitation' implies the process of returning to a healthy or good way of life or the process of helping an individual through training and therapy to combat misbehaviour, addiction, or severe mental illness. In other words, any rehabilitation setting is purposely directed towards 'change,' an improvement in the participant's condition due to an intervention (Dvir, 2015). Any academic programme within a correctional facility then serves as one aspect of a rehabilitation programme directed at improving a child offender's behaviour, life skills, ability to obtain and secure livelihood and prevent recidivism (Azam et al., 2021; Bell et al., 2016; Blomberg et al., 2012; Grenier, 1967; Hassan et al., 2020; Hussin, 2007; Kremer & Vaughn, 2019; Leone & Cutting, 2004; Leone & Wruble, 2015; Nurse, 2013; Pauzi et al., 2016; Rafedzi & Abrizah, 2016; Taib, 2012; Wan-Mohamed & Yunus, 2009) that focuses on two elements: rehabilitation and reintegration (De Ruigh, 2019; Samuri et al., 2013).

Experts and researchers globally have determined that several factors which influence successful educational intervention are:

(i) Programme executioner skills and attitude (Blomberg et al., 2012; Hassan et al., 2020; Mohammad & Azman, 2018; Ng et al., 2012; Pauzi et al., 2016; Someki & Allen, 2021; Taib, 2012; Wan-Mohamed & Yunus, 2009)

(ii) Student's age and criminal background (Hassan & Mokhtar, 2018; Leone & Cutting, 2004)

(iii) Systematic curriculum and well-managed teaching and learning processes (Azam et al., 2021; Pauzi et al., 2016)

(iv) Continuous inter-agencies and management support (Pauzi et al., 2016; Taib, 2012),

(v) Proper and well-equipped facilities (Rafedzi & Abrizah, 2016)

(vi) Offenders' readiness to engage in changes that will reduce their risk of re-offending (Anstiss et al., 2011)

A particular advantage of formal education delivered within a correctional institution is the constant supervision that impedes child offenders' tendency to repeat criminal offences (Fischer & Argyle, 2018). A study by Blomberg et al. (2012) suggested the positive impact of a well-structured academic programme on child offenders' motivation to continue their studies post-release. In contrast, poor programmes might be a reason for ineffective rehabilitation programmes, leading to lower deterrence (Ng et al., 2012).

Nevertheless, these factors also revealed several serious drawbacks. Nurse (2013) and Wald and Losen (2003) reasoned that child offenders frequently hailed from the vulnerable section of society and were forced to work to assist their families, leading them to drop out of school due to poor academic performance. Consequently, these child offenders have been denied educational opportunities, making them feel

insignificant (Grenier, 1967) and putting them on a course of self-doubt and failure (Nurse, 2013). Moreover, imprisonment offers no solution to the situation. Some may miss school days due to court appearances and poor re-entry preparation programmes that ultimately end with them dropping out of school (Wald & Losen, 2003). Others question the effectiveness of academic programmes within correctional facilities due to poor management and the lack of connections between public schools and the corrective education programme (Leone & Cutting, 2004; Nurse, 2013). Leone and Cutting (2004) stated that juvenile correctional institutions could not deliver effective educational-based programmes due to limited space, overcrowding, lack of funding, and unqualified education officers. Additionally, the youth may enter the institution with limited academic qualifications, behaviour problems, and substance abuse issues that may impede any educational-based intervention.

The situation is further aggravated by the decline in traditional socialising agents, such as religion and family, fuelling child offenders' violent behaviour (Sharpe, 2009). In other words, instead of providing an educational programme offering the opportunity to change their lives, the available system unintentionally produces angrier individuals who are more demotivated to learn from where they started, intensifying their probability of committing a crime in the future. This possibility is a reality as Nasir et al. (2010) found that some juvenile delinquents suffer from cognitive distortion, leading them to rationalise their delinquent behaviour as acceptable and rational. Resultantly, the system's expected modification of behaviour has fuelled these child offenders to be more aggressive. For example, Hassan and Mokhtar (2018) conducted a study involving 289 respondents from eight juvenile rehabilitation institutions in Malaysia and found that the spread of bullying in juvenile rehabilitation centres is alarming. Their study determined that at least 95% of trainees had engaged in bullying behaviour and became victims of bullying within a month of entry. Child offenders typically display low self-acceptance and emotional awareness, struggle with emotion control and motivation, and are often influenced by poor stress management, a weak grasp of religious teachings, and peer encouragement to persist in misdemeanours (Mustafa et al., 2017). In addition, Wan-Mohamed and Yunus (2009) further argued that child offenders' involvement and achievement in educational programmes are average. The condition could have resulted from disrupted teaching and learning processes, inability to attend class due to court proceedings, and understaffing of teachers and personnel, leading to low academic achievement in national examinations.

Rehabilitation Through Education at HGSTM

The first youth rehabilitation institution was established in 1948 in Muar Johor Prison, known as the "*Sekolah Pemulihan Lanjutan*." The school was relocated to

Telok Mas Melaka as a Youth Training School in 1950 and changed for the third time to Henry Gurney School on May 15th, 1950 (Hassan & Mokhtar, 2018). Since its inception by the British administration, the school has been designed to rehabilitate and reform young people who have committed moral offences. At the time, modules were based on the Borstal System, an English reformatory system designed for youths between 16 and 21, focusing on routine, discipline, and authority (Ariffin & Zailani, 2021). Under the plan, residents were placed under the close supervision of a housemaster or housemistress and the house staff, a practice still evident today. The Borstal System was later replaced with the Henry Gurney School Regulations 1949, which remains applicable under the Rehabilitation and Treatment Division (Ariffin & Zailani, 2021; Awal et al., 2021; Hashim et al., 2019).

The unit is responsible for formulating, designing, and implementing systematic, well-organised, and well-balanced rehabilitation programmes for incarcerated individuals in all correctional institutions in Malaysia (Taib, 2012). HGSTM is "the final" institution any child offenders can enter before being sent to the adult prison, as no permanent criminal record shall be registered and kept after release. This concept is a real-life Batman's 'clean slate programme' where each resident is given a last golden ticket to transform their life. As HGSTM's goal is not to punish but to educate, child offenders within the facility are referred to as 'residents' and not 'inmates,' even though strict prison rules still apply. The treatment these 'residents' receive is substantially more positive—staff are required to build relationships with the residents, engaging in regular conversations, offering nurture and motivation to foster good conduct, and aiming for continuous improvement. Residents are accommodated in dormitories under a housemaster's or housemistress's supervision, not in cells. The facility aims to prevent return visits by providing as many residents as possible with adequate education and vocational training.

These positive reinforcement practices at the facility are deliberate to defuse stigmatisation and negative labelling that may affect child offenders' self-respect and self-value. As most child offenders come from underprivileged families and drop out of school due to personal circumstances (Nurse, 2013; Wald & Losen, 2003), the institution proactively combats insecurities and improves the child offenders' self-identity and self-worth with such practice. Furthermore, HGSTM, as a correctional entity, is responsible for guaranteeing the safe custody and rehabilitation of its residents (Pauzi et al., 2016; Taib, 2012). As mentioned earlier, child offenders are treated differently and can never be placed under the same roof as adult offenders to avoid negative influence, trauma, or being bullied by adult prisoners (Md Salleh, 2007; Rahim et al., 2015). As a result, no adult inmates could be found within the compound and female child offenders were separated and placed entirely away from their counterparts, while newly admitted

child offenders were housed away from their 'seniors' during the early stage.

The PDM prepares the "Putra Module," a specific rehabilitation programme designed for child offenders in the HGSTM and other prison institutions (Taib, 2012). Under this module, the child offenders are equipped with various academic, vocational, spiritual, sports, and co-curricular activities. The Putra Module involves four phases: Orientation, Character Strengthening, Skills Development, and Pre-release (Ariffin & Zailani, 2021; Bidin et al., 2008; Budin, 2014; Hashim et al., 2019; Taib, 2012). Each of these phases serves a different purpose. Nevertheless, the overall objectives are set towards correcting and restoring or reinforcing positive morale, combating illiteracy, providing education opportunities, inculcating the culture of lifelong learning, and convincing the residents that education can change their lives to ensure that they can be returned to society as responsible and productive individuals (Ariffin & Zailani, 2021; Bidin et al., 2008; Budin, 2014; Hashim et al., 2019). According to Samuri et

al. (2013), child offenders sent to HGS must continue their education under a general school system, remedial education (essential reading, writing), or vocational training. The list of the academic and vocational training available at the institution is shown in Table 3.

This finding supports the positive effect of institutionalisation (Nong & Yusoff, 2019; Ramli, 2021; Samuri et al., 2013), where the residents are getting the necessary push to get back on track with their education. Nevertheless, as this study precedes, other compounding issues require immediate attention to improve the delivery of the education-based programmes at SHGTM.

METHODS

Mini-ethnography Approach

This study adopted a mini-ethnographic approach, which, despite its brief duration, aligns with traditional ethnographic methodologies by focusing intensely on specific aspects of cultural practices within constrained timeframes (Fetterman, 2019).

Table 3
Academic and vocational track at HGSTM

Academic Track	Religious Class	Vocational Track
3M (literacy classes for reading, writing and arithmetic) remedial classes (Sijil Persekolahan Malaysia/ Grade 11) Classes (equivalent to GCE O level)	Halaqah Module (for Muslims): The study of Aqeedah, Fiqh, Recitation of the Qur'an, Tafsir, Hadith, and Sirah Morale Module (for non-Muslims): Morals and Human Welfare	Sewing Crafting Bakery Canteen Kitchen Music/Orchestra/Brass-Band Automotive Welding Bakery Craft Wall-packing

This method was particularly suited to the aims of our study, which investigated the challenges faced by institutions implementing incarcerated youth education within a juvenile correctional facility. The chosen duration of 14 days, constrained by heightened security concerns and the spread of COVID-19, was considered sufficient to obtain meaningful insights within this specific context (Hammersley, 2006). Ethnography, as defined by Hughes (1997), is "the art and science of describing a group or culture" (p. 18), and it was employed due to its capacity to provide deep understanding from the perspectives of different stakeholders in their natural settings. This approach enabled the gathering of 'thick data' through various means such as interviews, observations, and document analysis, which is critical for understanding the complexities of juvenile correctional education (Helfenbein et al., 2011; Van Maanen, 2011). Despite the brief fieldwork period, the intensive engagement provided sufficient depth to capture the holistic 'story' of educational practices and challenges within the correctional setting, maintaining the integrity of ethnographic inquiry (Atkinson, 2015; Denzin & Lincoln, 2018).

Following the principles of ethnography, this study delved into the cultural dynamics of a juvenile correctional facility to identify the challenges the institution faces in rehabilitating its residents. The research effectively captured etic and emic perspectives by focusing on beliefs, language, behaviours, and prevalent issues such as power dynamics, resistance, and dominance (Atkinson, 2015; Fetterman, 2019). The etic perspective provided an analytical view of the institutional strategies and rehabilitation programs. At the same time, the emic approach allowed for a deeper insight into the residents' personal experiences and perceptions, revealing how these elements influence their rehabilitation process (Harris, 1976; Pike, 1967). This dual approach was pivotal in uncovering the subtle yet significant cultural interactions that shape rehabilitation outcomes, emphasising how language and behavioural norms within the facility both challenge and facilitate the process of cultural adaptation and identity reconstruction among the youth (Geertz, 1973). The study's focus on these ethnographic elements facilitated a comprehensive understanding of the institutional and cultural barriers to effective rehabilitation.

Ethical Considerations

In conducting this study, comprehensive ethical considerations were implemented to safeguard the anonymity and well-being of those involved, who are recognised as vulnerable participants. Ethical clearance was obtained from the university's Centre for Research and Innovation Management (approval number 02/2019, on March 21st 2019) before the commencement of the study, ensuring all research protocols met the required ethical standards. Additionally, all research materials, including semi-structured interview questions, were submitted to the Prison Department to

secure permission for entry, further aligning the study with institutional regulations and ethical guidelines (Israel & Hay, 2006). Before any interviews, participants were thoroughly briefed on the study's objectives, their rights to anonymity, and their ability to withdraw from the study at any point without consequences. This briefing was part of an ongoing informed consent process meticulously documented and monitored (Mertens & Ginsberg, 2009).

Population, Sample, and Sampling Technique

The study employed criterion sampling to ensure that the selected participants experienced the studied phenomenon. As the researchers do not have access to the list of names of those to be included in the study, "[c]riterion sampling worked well when all individuals studied represent people who have experienced the phenomenon"

(Creswell & Poth, 2018, p. 157). Hence, the population selected for this study were the residents, security officers, academic teachers, and the management personnel of HGSTM. In total, 27 people were included in this study. Their distribution is described in Tables 4 and 5.

Archival Data

This study included archival data, annual reports, research papers, and official data and documents provided by numerous government agencies. This type of data is an essential source of information. It offers a valuable comparison for checking the truthfulness and accuracy of 'stories' presented by participants during the interview sessions (Hughes, 1997).

Observations

In this study, the researchers' role as 'observer participants' varied depending

Table 4
Distribution of gender

Phase	Gender		Total
	Male	Female	
Early	3	0	3
Middle	4	2	6
Final	3	2	5

Table 5
Population roles

Roles	Gender		Total
	Male	Female	
Administrator/Policymakers	3	0	3
Students	4	2	6
Staff*	3	2	5

Note. *Security Officers/Academic Staff/Workshop Instructors

on activity type and its implications on the data (Hughes, 1997). Overall, the observations focused on the two curricula: the academic curriculum and the vocational training implemented at HGSTM. With the school's management granting permission, five observation sessions were conducted over the two weeks. The approach outlined by Helfenbein et al. (2011) was adopted—a "nonintrusive, hands-off, eyes-on" method with no active participation in the activities—to gain a first-hand, inside perspective and a quick understanding of the events. During each session, detailed notes were taken and reflected upon after each observation.

Interviews

Semi-structured interviews were conducted with residents, security officers, academic teachers, and top management personnel. According to Hughes (1997), interviews with people from different departments and organisational levels are essential to ensure a broad range of perspectives. Twenty-seven interviews were conducted on-site and lasted approximately thirty minutes to two hours. Each discussion followed a semi-structured protocol. Some questions were directed towards gaining the residents' awareness of educational opportunities provided at the facilities, tapping into the experiences of teachers and personnel, and identifying challenges faced in delivering academic-based programmes. A few personnel were encouraged to discuss their thoughts and gauge their perceptions of the education system. Due to strict security and confidentiality concerns, no

recording devices were permitted beyond the school's gate. As a result, the researchers depended entirely on rigorous note-taking, while a small portion of the interviews were audiotaped and transcribed verbatim as they were conducted off-site.

Data Analysis

In this ethnographic study, we employed a culturally responsive inductive analysis to meticulously explore and interpret the cultural dimensions influencing the rehabilitation programs within the juvenile correctional facility. Our analytical approach was structured around Geertz's (1973) concept of thick description, which involves detailed accounts of field experiences to capture the deep meanings and social interactions within the culture-sharing group. By integrating interviews, observations, and archival data, we achieved methodological triangulation, enhancing the credibility and depth of our findings. Each researcher independently analysed the interview transcripts, focusing on identifying cultural themes such as beliefs, practices, power dynamics, resistance, and expressions of identity that are pivotal in rehabilitation. These themes were then collaboratively refined and cross-validated through extensive team discussions, ensuring they resonated with the observed behaviours and documented institutional practices. The dependability and confirmability of our findings were rigorously maintained through an audit trail involving a detailed review of all data sources and the decision-making processes underlying theme development

(Lincoln & Guba, 1985). The refined themes were further assessed against the backdrop of existing literature and secondary data, ensuring they provided a comprehensive explanation of the challenges faced by the facility and aligned with the broader ethnographic discourse on rehabilitation in correctional settings. This methodological rigour allowed us to confidently assert that our conclusions authentically represent the institution's rehabilitation program's cultural underpinnings and operational challenges.

FINDINGS AND DISCUSSIONS

Challenge 1: The Security vs Rehabilitation Conundrum

As a correctional facility under the management of the PDM, HGSTM faces a unique cultural challenge in managing its residents. Two divergent and conflicting discourses emerged: the management's competing interest in maintaining safe custody while delivering an effective rehabilitation programme. One of the personnel mentioned that:

> *There is a vast difference between managing 'security' and 'rehabilitation.' Regarding security, the ratio between the wardens and residents would be 1 to 2. Still, in rehabilitation situations, the balance could be 1 to 10 or maybe 30 residents. You must understand the differences between the two; activities that involve 'security' may include patrolling, accompanying residents to the court hearing, bringing them to the*

> *hospital for treatment, and monitoring residents' movement from one end to the other. 'Rehabilitation' would include attending academic classes, religious education, workshops, or joining group counselling. So, as you can see, the number of personnel present at one time differs significantly depending on the nature of the situation.*

A significant output for this competing scenario would be the institution's priority, a finding similar to the research by Someki and Allen (2021). The interviews with the teachers and workshop trainers revealed a similar theme where the school's educational mission was not 'seen' necessarily prioritised by the management. Nevertheless, the researchers deduced that the conflict is a high priority due to the lack of consideration of the fundamental difference between 'security' and 'rehabilitation.' For example, during the observation, there were instances where workshops were closed as wardens, who are also workshop instructors, were scheduled for security activities such as accompanying residents to court hearings. Hence, security was the priority in the situation, whereas rehabilitation became second. One way to overcome this issue is by dedicating the availability of personnel for one specific task rather than one person tasked with different roles and responsibilities at the institution. This unfortunate scenario may result in unwanted negativity among the teachers and workshop instructors as they may perceive their position at the school as irrelevant and unnecessary. Additionally, money allocated by the central government should first

be used to improve the school's security, such as safety equipment, maintenance of security assets, and procuring new safety-related equipment. During the interview, a vocational instructor commented on the lack of funding to buy necessary workshop equipment and materials for their students:

It is challenging for us to deliver good training. We can train them and provide just enough for their certification. However, we cannot expose them to the current industrial tools as our requests to buy such equipment were often rejected. So, we must be resourceful. For my workshop, for example, we were lucky to acquire materials and equipment from another vocational training centre that is now closed. We need to have materials currently being used in the industry. By not being able to do so, these residents will face difficulties competing with candidates from better institutions.

Leone and Wruble (2015) encountered the same issue in their study. They suggested that a dedicated budget should be tabled based on a per-pupil cost basis, which includes the necessary money to buy essential equipment. By properly budgeting, educators and instructors could organise tailored programmes and replace damaged and outdated equipment at their workshops.

The 'security' and 'rehabilitation' conflict also compounds other problems. First, the absence of computers or any tech-based program within the compound was surprising. This finding also accords

with observations by Awal et al. (2021), Someki and Allen (2021) and Leone and Wruble (2015), where there is a constraint on technology usage at such facilities. The decision was made to minimise the possible security risk posed by having such equipment on-site. As the residents are all minors, they are protected by law, which isolates them from exposure to the outside world. No computers or hand-held devices are permitted on location to prevent unnecessary disclosure through social media. Secondly, the residents may abuse such equipment, such as accessing and obtaining pornographic materials, which could create more problems within the vicinity. The academic teachers further suggest an ongoing conflict in providing residents with the best teaching and learning experiences. One senior teacher mentioned that:

It is different here. As teachers, we would like to use different approaches to motivate them (the residents) to learn. In a regular school, this could be done by giving them prizes such as chocolates or something like that, but we cannot practice such an approach due to security requirements. I understand why the management had to make this—to avoid smuggling contraband—and I fully support this decision. Whether we like it or not, these residents have much time, and they can be creative and manipulative, given the particular conditions given to them. Some tools like scissors, knives, or even pens are a security risk. We do not want them

to have the materials to make weapons and use them to injure or kill someone else. You can see the security officers are always present to guarantee order, but this may not make them comfortable, having prying eyes watching their every step while they are learning... As you said, we cannot bring our handphones and money beyond the main gate. We are subjected to body searches every morning, and we cannot stay within the complex after 2.00 p.m.... the gate to the complex will be locked, so we must go home. There is no such thing as extra classes or tuition here. However, despite all that, we still manage to educate them. We have good academic achievement in SPM, and a number of our students were able to further their studies by doing degrees at training centres. So here... it is about having that will... when there is a will, there is a way.

Another interesting observation was the lack of sporting activities among the residents. All the residents must be in their blocks by 5.30 p.m., and the block gates will be locked by 6.30 p.m. The scenario suggests that the residents do not have any opportunity to get involved with any physical exercise despite its positive impact on reducing aggressive behaviour and depression (Nasir et al., 2010). One of the prison officers explained that:

It is entirely a decision made to protect them. Allowing them to play requires a lot of personnel. Due to our location in the bay area, some may take advantage of the situation and plot a runaway plan that may endanger themselves and the surrounding area. Plus, as the time usually nears sunset, when it gets dark quickly, such an event would be catastrophic for us. We want to avoid such circumstances.

Addressing this security versus rehabilitation challenge would not be easy. In this respect, no programme could be initiated without assuring safety among those involved. As observers, the researchers opine that the residents should enjoy more liberty and freedom in their teaching and learning, but doing so will pose a higher security risk. The symbiosis between security and rehabilitation necessitates close participation among policymakers, stakeholders, and government agencies to overcome this challenge. A long-term action plan should focus on recruiting more personnel and allocating more money to the institution. Nevertheless, considering the current post-COVID economic period, the move may not be a welcome option. It may create an unwanted public outcry as the fund could be directed to cater for other critical national interests. Nonetheless, better consideration and consolidation of the situation would lead to more fruitful results.

Challenge 2: Providing Ample Education and Vocational Training

The next challenge is the institution's ability to provide its residents with comprehensive education and vocational training due to limited access, a shortage of workforce, and

insufficient facilities. Based on a statistic provided by PDM in 2016 (Table 6), only 69% of the population was included in academic or vocational training at the institution. The situation did not improve during the observation, as the number of residents during the two weeks was around 1,200. According to one of the correctional officers, the increasing number of residents resulted in the closure of another facility dedicated to girls from a different locality. The researchers were further informed that the number of personnel at the facility remains the same despite the increase, which could reduce rehabilitation and education effectiveness.

Another direct impact of the increasing number of residents at the school is the limited number of spaces and rooms available to attend either academic classes or any skill-based training. As mentioned earlier, the institution's priority is the residents' and staff's safety and security before such activities occur. Due to inadequate space, the total number of participants at one time, such as at the school complex or a workshop, must be kept at a manageable number. Consequently, this situation created restrictions where only a certain number of people may access either activity. Although the residents were given the right to choose whether to continue their schooling or undergo skill-based training, the lack of

access to programmes is no better (Leone & Wruble, 2015).

Other than access, an undermining issue exists where the female residents may not enjoy the same opportunity for vocational training. Helfenbein et al. (2011) highlighted that girls in the juvenile justice system are more prone to be neglected and treated differently from boys. Nevertheless, in the present study, this finding is not due to a genderised double standard but rather a combination of issues related to the challenges elaborated beforehand. For example, the female residents were often separated and segregated from their male counterparts to avoid unwarranted intimacy among the residents and to maintain security. Consequently, almost all workshops were inaccessible and off-limits for the female residents, thus restricting their ability to hone their skills and further their areas of interest. Notably, the facility has received RM50 million to build a new academic complex, including science labs, computers, and more classes to provide residents with more space.

Another pressing matter is the different academic attainment of these residents as they arrive at the school. When asked when they dropped out, the range was determined to be between Standard 6 (primary) and Form 2 (lower secondary). One of the senior teachers explained that:

> *The (resident's) academic background is essential. Even though we strain and choose only those with specific cognitive abilities, their previous academic standing is paramount. Because some*

Table 6

Participation in HGSTM residence in academic and vocational programme

Total	3M	Pre-SPM	SPM	SKM1
679	17	111	107	231

have stopped schooling for three or four years, getting them up to speed is very difficult. They quit school in Form 2 (14 years old) and arrived here when they were seventeen. [So] they are three or four years behind their friends who stayed in school. This brings unique challenges for us. First, we need to get them back to speed after so many years of no schooling. Secondly, we must prepare them for the [SPM] examination. This is one arduous task, as we are expected to deliver. Mind you, we have recorded a 100% passing rate, making us the most successful rehabilitation centre in Malaysia regarding academic achievement. This is good for the school as it suggests that whatever we do works. However, it also comes with enormous responsibility and pressure.

Furthermore, during one of the observations at the automotive workshop, one of the instructors shared that one of the trainees did not have a compulsory academic certificate since he had never attended school. Despite his interest and ability to work on an engine, the current system will not allow individuals like him to obtain the needed vocational certification that could later be used to seek employment once released. The trainee can never be eligible to apply for early release as it requires a working placement that can only be viable through a job application with substantial proof of training. One possible solution to this limitation is developing an accredited training programme that meets the Accreditation of Prior Experiential Learning or APEL set by the Malaysia Qualification Agency (MQA). Under APEL, the residents' experiential learning (informal and non-formal) relevant to a programme can be evaluated and accepted for a credit award. The approach will inevitably open a new opportunity for the residents to gain the needed certificates.

Challenge 3: Continuous Inter-agencies and Community Support

Various perspectives were expressed outside and in communal support of the school. HGSTM receives help from multiple inter-agencies and the local community in implementing lifelong learning programmes within the institution, which is evident through various strategic collaborations with different entities within the school construct. The Ministry of Education has played a critical role in providing the school with qualified and experienced teachers to teach academic subjects. Besides, the automotive workshop works with a well-known Japanese-owned manufacturer that trains future mechanics. In addition, the local religious department has been sending qualified instructors to conduct religious classes. Numerous non-government organisations (NGOs) support programmes, such as motivational talks, skill-based enhancement courses, career days, and drug abuse awareness programmes, hoping to improve the resident's livelihood after release. More importantly, the Ministry of Youth's Yellow Ribbon Project, an

initiative to enhance inmates' and at-risk youth's abilities before their release, is benefiting 24,234 ex-detainees, ex-prisoners, Supervised Persons (ODS) and HGS residents through skills, sports, and entrepreneurship platform to ensure that they can return to the community with a better life. Launched on October 19th 2018, five clusters drive the project: the Skills Cluster, Sports Cluster, Entrepreneurship Cluster, Marketability Cluster, and Awareness Campaign Cluster. This project hopes to eliminate society's negative stigma towards this group and open up a second opportunity for this group.

The examples above support studies by Taib (2012) and Hashim et al. (2019) that the PDM has proactively provided education and training behind the fence by the Prison Act (1955). The practice is more than welcomed as the involvement of professionals at every point in educating juveniles can assist the long process of creating ethical citizens (Seroczynski & Jobst, 2016). Nevertheless, despite the above findings, the observation and interview sessions revealed some concerning remarks about these external aids. Based on the interviews, there is still room for aligning ideologies, institutional practices, society, and individual efforts towards creating opportunities for formerly incarcerated youths. The assistance provided has been inconsistent and often insufficient. One correctional officer iterated that the school is not receiving proper and ample support from the local segments of society. For example, the only industrial player that provides a real chance for work placement after release is the Japanese company that offers two posts per year to those who have completed their vocational training. This view was echoed by an informant who said:

I believe that the Department has done everything to rehabilitate these young offenders. To an extent, we are very successful. Behind closed doors, we teach them how to pray… memorised verses from the Quran… We send them to school to learn academics; if they do not enjoy those, we welcome them to our workshops. They know a lot here. The problem started when they were released. That is the moment when reality strikes them. They were 'unwanted' at every corner. We have cases where the resident's parents reject them and do not want to take them back. We have instances where the neighbours despise the very presence of the residents in their community. They were despised and outcasts. They cannot find work. They have an empty wallet, no place to stay, and an empty stomach… When that happens—when you are being rejected—where will you go? To whom do you turn? No matter how strong you are, you will have a breaking point. Furthermore, this is the moment when those 'friends' come back. That 'friend' that you took drugs with… that 'friend' that got you into stealing… before long, they reverted to their old ways and ended up back here or in prison, or they will end up dead.

This finding will undoubtedly be much scrutinised, but there is immediate, dependable support for the informant's claim. As mentioned in Table 1, a significant increase in re-offending cases is observable among juveniles. Wald and Losen (2003) emphasised the importance of positive political will in preventing the school-to-prison pipeline. Although this perspective is beyond simplistic rhetoric that formal education can change them all, it is instead a process of acknowledging that the process requires recognising complex societal problems. James (2011) posed an interesting argument that the school-to-jail pipeline can only be eradicated when an active opportunity system is created to support these incarcerated youth. Nevertheless, through this study, the process can be concluded as ongoing. The residents of HGSTM, once released, are in danger of exclusion, labelling, and ill-treatment due to the negative social label. Realising the social stigma surrounding the policy changes should include ideological counter narratives that champion incarcerated youths as individuals who exhibit lifelong learning, manage and cope with societal change and function as constructive and active participants in society.

CONCLUSION

In conclusion, the metaphor embedded in the title vividly encapsulates the intricate nature of this study, portraying the formidable task of diverting young individuals from the school-to-jail pipeline. Much like leading a horse to water and hoping it drinks independently, the metaphor underscores the multifaceted challenges of actively persuading individuals to engage in transformative actions. It serves as a poignant reflection on the nuanced efforts required to effect positive change in the lives of those entangled in the criminal justice system. This research was set to explore ways children in conflict with the law are being educated at specialised institutions, determine challenges such institutions face, and provide suggestions to improve the current practice. As previous researchers have not explored education for incarcerated youth in detail, the present study has managed to discover challenges in increasing incarcerated youth's educational achievement and lowering recidivism. As suggested in the study's title, education for incarcerated youth should aim to deliver independent, self-serving, and inspired individuals motivated to improve their lives. As the rehabilitation programmes for incarcerated individuals in Malaysia started in the pre-independence period, various changes have been made to take heed of the ever-challenging task of rehabilitating these youth. By exploring this topic, the study has managed to pinpoint several areas of concern, such as the number of qualified personnel, collective effort from different government and private agencies, and providing ample and conducive space and environment to increase residents' participation in education and vocational

training that can improve the delivery of the current system. Changes to these areas would eradicate the school-to-jail pipeline, thus resulting in a more secure society.

Moreover, more research is needed concerning incarcerated youth education in Malaysia. As this study highlights incarceration institutions' challenges, a more pressing issue that requires attention would be the relationship between educational attainment and decreased criminal behaviour in Malaysia. The data may assist policymakers in improving the current practice and enhancing the potential social returns to society. Nevertheless, the study has not considered the resident's social background and history variables, including family background, parental criminality, family income, locality, the number of prior arrests, and out-of-home placements, which are known to influence criminal conduct. More importantly, the study has no objective evidence to suggest that postsecondary education can buffer criminal recidivism for young people. The researchers posed that the real challenge faced by any correctional or rehabilitation institutions in Malaysia or elsewhere can better understand *how* offenders change.

ACKNOWLEDGEMENTS

REFERENCES

Abrams, L. S., & Franke, T. M. (2013). Postsecondary educational engagement among formerly-incarcerated transition-age young men. *Journal of Offender Rehabilitation, 52*(4), 233-253. https://doi.org/10.1080/10509674.2013.782774

Amani, B., Milburn, N. G., Lopez, S., Young-Brinn, A., Castro, L., Lee, A., & Bath, E. (2018). Families and the juvenile justice system: Considerations for family-based interventions. *Family & Community Health, 41*(1), 55-63. https://doi.org/10.1097/FCH.0000000000000172

Anstiss, B., Polaschek, D. L. L., & Wilson, M. (2011). A brief motivational interviewing intervention with prisoners: When you lead a horse to water, can it drink for itself? *Psychology, Crime & Law, 17*(8), 689-710. https://doi.org/10.1080/10683160903524325

Ariffin, M. T., & Zailani, S. (2021). Pembelajaran bahasa Arab dalam kalangan pesalah juvana di Sekolah Agama (JAIM) Henry Gurney, Telok Mas, Melaka [Arabic Language Learning Among Juvenile Offenders at Sekolah Agama (JAIM) Henry Gurney, Telok Mas, Melaka]. *Jurnal Islam dan Masyarakat Kontemporari, 22*(1), 36-52.

Atilola, O. (2013). Juvenile/youth justice management in Nigeria: Making a case for diversion programmes. *Youth Justice, 13*(1), 3-16. https://doi.org/10.1177/1365480212474731

Atkinson, P. (2015). *For ethnography.* SAGE Publications.

Awal, M. N. A., Samuri, M. A. A., Sham, M. F., & Zainol, N. I. (2021). Hak kanak-kanak dalam

institusi tahanan menurut instrumen antarabangsa dan perundangan Malaysia [Children's rights in detention institutions according to international instruments and Malaysian legislation]. *UUM Journal of Legal Studies, 12*(2), 283-305. https://doi.org/10.32890/uumjls2021.12.2.12

Azam, S. B. M., Bakar, S. H. A., Yusoff, J. Z. M., & Rauf, S. H. A. (2021). A case study on academic and vocational training for child offenders undergoing a multisystemic therapy-based rehabilitation order in Malaysia. *Children and Youth Services Review, 122*, Article 105911. https://doi.org/10.1016/j.childyouth.2020.105911

Bell, B., Costa, R., & Machin, S. (2016). Crime, compulsory schooling laws and education. *Economics of Education Review, 54*, 214-226. https://doi.org/10.1016/j.econedurev.2015.09.007

Bidin, S. N. B. S., Yakub, M., & Yusoff, Z. H. M. (2008). Perubahan personaliti kesan uslub tabshir dan indhar: Kajian kes di Sekolah Henry Gurney (SHG) [Personality changes due to the effects of tabshir and indhar methods: A case study at Henry Gurney School]. *Jurnal Usuluddin, 27*, 41-59.

Blomberg, T. G., Bales, W. D., & Piquero, A. R. (2012). Is educational achievement a turning point for incarcerated delinquents across race and sex? *Journal of Youth and Adolescence, 41*(2), 202-216. https://doi.org/10.1007/s10964-011-9680-4

Brewer, J. D., Lockhart, B., & Rodgers, P. (1998). Informal social control and crime management in Belfast. *British Journal of Sociology, 49*(4), 570-585. https://doi.org/10.2307/591289

Budin, D. (2014). Pendidikan juvana di Jabatan Penjara Malaysia: Dasar, hala tuju, pelaksanaan dan cabaran [Juvenile education in the Malaysian prison department: policies, direction, implementation, and challenges]. *Jurnal Hadhari, 6*(1), 87-104.

Child Act 2001 (Act 611) (Malaysia). *International Law Book Services.* (2001).

Chung, H. L., Mulvey, E. P., & Steinberg, L. (2011). Understanding the school outcomes of juvenile offenders: An exploration of neighborhood influences and motivational resources. *Journal of Youth and Adolescence, 40*, 1025-1038. https://doi.org/10.1007/s10964-010-9626-2

Creswell, J. W., & Poth, C. N. (2018). *Qualitative inquiry and research design: Choosing among five approaches* (4th ed.). SAGE Publications.

Dawkins, M., & Sorensen, J. R. (2015). The impact of residential placement on aggregate delinquency: A state-level panel study, 1997-2011. *Criminal Justice Policy Review, 26*(1), 85-100. https://doi.org/10.1177/0887403414534854

De Ruigh, E. L., Popma, A., Twisk, J. W. R., Wiers, R. W., Van der Baan, H. S., Vermeiren, R. R. J. M., & Jansen, L. M. C. (2019). Predicting quality of life during and post-detention in incarcerated juveniles. *Quality of Life Research, 28*, 1813-1823. https://doi.org/10.1007/s11136-019-02160-6

Denzin, N. K., & Lincoln, Y. S. (Eds.). (2018). *The SAGE Handbook of Qualitative Research* (5th ed.). SAGE Publications.

Dvir, Z. (2015). Difference, significant difference and clinically meaningful difference: The meaning of change in rehabilitation. *Journal of Exercise Rehabilitation, 11*(2), 67-73. https://doi.org/10.12965/jer.150199

Fetterman, D. M. (2019). *Ethnography: Step-by-step* (4th ed.). SAGE Publications. https://doi.org/10.4135/9781071909874

Fischer, S., & Argyle, D. (2018). Juvenile crime and the four-day school week. *Economics of Education Review, 64*, 31-39. https://doi.org/10.1016/j.econedurev.2018.03.010

Geertz, C. (1973). *The interpretation of cultures: Selected essays.* Basic Books.

Grenier, W. J. (1967). Rehabilitation theory and practice. *Juvenile Court Judges Journal, XVIII*(1), 16-19. https://doi.org/10.1111/j.1755-6988.1967.tb00383.x

Hammersley, M. (2006). Ethnography: Problems and prospects. *Ethnography and Education, 1*(1), 3-14. https://doi.org/10.1080/17457820500512697

Harris, M. (1976). History and significance of the emic/etic distinction. *Annual Review of Anthropology, 5*, 329-350. https://doi.org/10.1146/annurev.an.05.100176.001553

Hashim, H., T'Ciang, N. Z. C. J., & Rajamanickam, R. (2019). Program pemulihan di dalam penjara bagi pesalah jenayah: Kajian di Jabatan Penjara Malaysia [Prison rehabilitation programs for criminal offenders: A study at the Malaysian Prison Department]. *Jurnal Undang-undang dan Masyarakat, 72*-85.

Hassan, N., Ibrahim, F., Nor, N. S. I. Z., & Mokhtar, D. (2020). Hubungan kakitangan-pelatih dan tingkah laku agresif dalam kalangan pelatih muda di institusi pemulihan juvana [Staff-trainee relationships and aggressive behavior among young trainees in juvenile rehabilitation institutions]. *Jurnal Psikologi Malaysia, 34*(2), 157-168.

Hassan, N., & Mokhtar, D. (2018). Buli dalam kalangan pelatih di pusat pemulihan juvana [Bullying amongst young people in juvenile rehabilitation institutions]. *Jurnal Psikologi Malaysia, 32*(3), 146-164.

Helfenbein, R. J., Stuckey, S. M., Fennewald, T. J., & Hoffmann, R. P. (2011). Non-didactic, a culture of peace, and "some cat from Brazil": A case study of negotiating a dialogic curriculum with incarcerated girls. *The Urban Review, 43*, 507-527. https://doi.org/10.1007/s11256-011-0183-0

Hughes, J. C. (1997). Research: Sociological paradigms and the use of ethnography in hospitality research. *Journal of Hospitality &*

Tourism Research, 21(1), 14-27. https://doi.org/10.1177/109634809702100104

Hussin, N. (2007). Juvenile delinquency in Malaysia: Legal framework and prospects for reforms. *IIUM Law Journal, 15*(2), 197-214. https://doi.org/10.31436/iiumlj.v15i2.68

Israel, M., & Hay, I. (2006). *Research ethics for social scientists.* Sage.

Iwatsuki, T. (2019). What is 'educational support' for youth in social difficulties?: A qualitative study of support groups for literacy learning in Japan. *International Journal of Lifelong Education, 38*(4), 465-477. https://doi.org/10.1080/02601370.2019.1648575

James, M. C. (2011). Toward systems of opportunity: How to cap pipelines to prisons in schools. *Journal of Curriculum and Pedagogy, 8*(2), 123-127. https://doi.org/10.1080/15505170.2011.624894

Kennedy, A. (2013). Education in custody: Young males' perspectives. *Contemporary Social Science, 8*(2), 104-119. https://doi.org/10.1080/21582041.2013.767467

Kremer, K. P., & Vaughn, M. G. (2019). College aspirations among incarcerated juvenile offenders: The importance of maternal education and neglect. *Youth Violence and Juvenile Justice, 17*(4), 431-447. https://doi.org/10.1177/1541204018821416

Leone, P. E., & Cutting, A. C. (2004). Appropriate education, juvenile corrections, and no child left behind. *Behavioral Disorders, 29*(3), 260-265. https://doi.org/10.1177/019874290402900305

Leone, P. E., & Wruble, P. C. (2015). Education services in juvenile corrections: 40 years of litigation and reform. *Education and Treatment of Children, 38*(4), 587-604. https://doi.org/10.1353/etc.2015.0026

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry.* Sage.

Little, R. (2015). Putting education at the heart of custody? The views of children on education in a young offender institution. *British Journal of Community Justice, 13*(2), 27-46.

McCray, E. D., Ribuffo, C., Lane, H., Murphy, K. M., Gagnon, J. C., Houchins, D. E., & Lambert, R. G. (2018). "As real as it gets": A grounded theory study of a reading intervention in a juvenile correctional school. *Child & Youth Care Forum, 47*, 259-281. https://doi.org/10.1007/s10566-017-9429-7

Md Salleh, A. S. (2007). Kewajaran mahkamah bagi kanak-kanak di Malaysia [The justification of juvenile courts in Malaysia]. *REKAYASA– Journal of Ethics, Legal and Governance, 3*, 61-67.

Mertens, D. M., & Ginsberg, P. E. (2009). *The handbook of social research ethics.* Sage Publications. https://doi.org/10.4135/9781483348971

Miyaguchi, K., Matsuura, N., Shirataki, S., & Maeda, K. (2012). Cognitive training for delinquents within a residential service in Japan. *Children and Youth Services Review*, *34*(9), 1762-1768. https://doi.org/10.1016/j.childyouth.2012.05.013

Mohammad, T., & Azman, A. (2018). Probation officers and the experience of juvenile offenders in the juvenile system. *Kajian Malaysia, 36*(2), 69-88. https://doi.org/10.21315/km2018.36.2.4

Mustafa, M. N., Suandi, T., Hamzah, A. H., & Ismail, M. D. I. A. (2017). Fenomena delinkuen dalam kalangan remaja yang berisiko di sebuah sekolah menengah kebangsaan agama di luar bandar Malaysia [The delinquency phenomenon among at-risk adolescents in a rural national religious secondary school in Malaysia]. *Jurnal Kemanusiaan, 14*(2), 10-34.

Nasir, R., Zamani, Z. A., Yusooff, F., & Khairudin, R. (2010). Cognitive distortion and depression among juvenile delinquents in Malaysia. *Procedia-Social and Behavioral Sciences, 5*, 272-276. https://doi.org/10.1016/j.sbspro.2010.07.087

Ng, I. Y. H., Sarri, R. C., Shook, J. J., & Stoffregen, E. (2012). Comparison of correctional services for youth incarcerated in adult and juvenile facilities in Michigan. *The Prison Journal, 92*(4), 460-483. https://doi.org/10.1177/0032885512457547

Nicklin, L. L. (2017). 'Make not your prisons your prisons': Participant perceived potential outcomes of a Shakespeare focussed alternative to juvenile incarceration in the USA. *Emotional and Behavioural Difficulties, 22*(1), 2-17. https://doi.org/10.1080/13632752.2017.1287339

Nong, S. N. A. S., & Yusoff, J. Z. M. (2015). The legal concept of children beyond control: A global perspective. *Pertanika Journal of Social Sciences & Humanities, 23*(S-Nov), 63-74.

Nong, S. N. A. S., & Yusoff, J. Z. M. (2019). Rehabilitation of children beyond control in Malaysia: Towards deinstitutionalisation. *International Journal of Academic Research in Business and Social Sciences, 9*(3), 449-459. https://doi.org/10.6007/IJARBSS/v9-i3/5705

Nurse, A. M. (2013). Juveniles and college: Inside out as a way forward. *The Prison Journal, 93*(2), 234-247. https://doi.org/10.1177/0032885512473051

Pauzi, H. M., Saim, N. J., Sarnon, N., & Kamaluddin, M. R. (2016). Faktor-faktor pelaksanaan program pemulihan akhlak yang berkesan untuk pesalah kanak-kanak [Factors influencing the effective implementation of moral rehabilitation programs for juvenile offenders]. *e-Bangi, 13*(3), 23-36.

Pike, K. L. (1967). Language in relation to a unified theory of the structure of human behavior. De Gruyter Mouton. https://doi.org/10.1515/9783111657158

Prison Act 1955 (Act 537) (Malaysia). *International Law Book Services.* (1955).

Pung, P. W., Yaacob, S. N., Baharudin, R., & Osman, S. (2015). Low self-control, peer delinquency

and aggression among adolescents in Malaysia. *Asian Social Science*, *11*(21), 193-202. https://doi.org/10.5539/ass.v11n21p193

Rafedzi, E. R. K., & Abrizah, A. (2016). Information needs of male juvenile delinquents: The needs to be met in a prison setting. *Information Development, 32*(3), 592-607. https://doi.org/10.1177/0266666914563357

Rahim, A. A., Zainudin, T. N. A. T., & Rajamanickam, R. (2015). School students' involvement in criminal activities and their position in Malaysian law. *Mediterranean Journal of Social Sciences, 6*(4), 403-403.

Ramli, N. N. S. C. (2021). Inculcating a sense of responsibility through restorative justice for child offenders in Malaysia. *Journal of Asian and African Social Science and Humanities, 7*(2), 13-19.

Reed, D. K., & Wexler, J. (2014). "Our Teachers … Don't Give Us No Help, No Nothin'": Juvenile offenders' perceptions of academic support. *Residential Treatment for Children & Youth, 31*(3), 188-218. https://doi.org/10.1080/0886571X.2014.943568

Samuri, M. A. A., Kusrin, Z. M., Awal, N. A. M., Nor, A. H. M., Hamjah, S. H., & Ab Rahman, Z. (2013). The rehabilitation theory in adjudicating child offenders and its application in Malaysia. *Asian Social Science, 9*(15), 156-165. https://doi.org/10.5539/ass.v9n15p156

Sander, J. B., Sharkey, J. D., Groomes, A. N., Krumholz, L., Walker, K., & Hsu, J. Y. (2011). Social justice and juvenile offenders: Examples of fairness, respect, and access in education settings. *Journal of Educational and Psychological Consultation, 21*(4), 309-337. https://doi.org/10.1080/10474412.2011.620816

Schaeffer, C. M., Henggeler, S. W., Ford, J. D., Mann, M., Chang, R., & Chapman, J. E. (2014). RCT of a promising vocational/employment program for high-risk juvenile offenders. *Journal of Substance Abuse Treatment*, *46*(2), 134-143. https://doi.org/10.1016/j.jsat.2013.06.012

Seroczynski, A. D., & Jobst, A. D. (2016). Latino youth and the school-to-prison pipeline: Addressing issues and achieving solutions. *Hispanic Journal of Behavioral Sciences, 38*(4), 423-445. https://doi.org/10.1177/0739986316663926

Sharpe, G. (2009). The trouble with girls today: Professional perspectives on young women's offending. *Youth Justice, 9*(3), 254-269. https://doi.org/10.1177/1473225409345103

Someki, F., & Allen, D. (2021). Reframing assessment as relational: How do teachers of incarcerated youth understand assessment? *Education and Urban Society, 53*(3), 311-335. https://doi.org/10.1177/0013124520931462

Strnadová, I., O'Neill, S. C., & Cumming, T. M. (2017). A snapshot of education behind the fence: Supporting engagement in education of incarcerated youth in Australia. *International Journal of Educational Research, 85*, 33-42. https://doi.org/10.1016/j.ijer.2017.06.004

Taib, R. M. (2012). Empowering young inmates through lifelong learning programs in Malaysia: Prospects and challenges. *International Business Education Journal, 5*(1), 69-77.

Tharshini, H. K., Ibrahim, F., Mohamad, M. S., & Zakaria, E. (2021). Pengaruh faktor konsep kendiri, kesedaran komuniti dan sokongan sosial terhadap pengintegrasian sosial bagi pesalah muda di Malaysia [The influence of self-concept, community awareness, and social support factors on the social reintegration of young offenders in Malaysia]. *Kajian Malaysia, 39*(1), 117-140. https://doi.org/10.21315/km2021.39.1.6

Van Maanen, J. (2011). *Tales of the field: On writing ethnography* (2nd ed.). The University of Chicago Press. https://doi.org/10.7208/chicago/9780226849638.001.0001

Van Vleet, R. K. (1999). The attack on juvenile justice. *The Annals of American Academy, 564*(1), 203-214. https://doi.org/10.1177/000271629956400112

Wald, J., & Losen, D. (2003). Defining and redirecting a school-to-prison pipeline. *New Directions for Youth Development*, *2003*(9), 9-15. https://doi.org/10.1002/yd.51

Wan-Mohamed, W. A., & Yunus, M. H. (2009). The inculcation of generic skills among juveniles through technical and vocational education. *US-China Education Review, 6*(4), 56-61.

Utilization of Digital Space in Strengthening Religious Moderation Education of Generation Z in Indonesia

Umi Muzayanah[1]*, Moch Lukluil Maknun[2], Nur Laili Noviani[1], Siti Muawanah[1] and Zakiyah[1]

[1]Research Center for Religion and Belief, National Research and Innovation Agency, 12710 Jakarta, Indonesia
[2]Research Center for Manuscripts, Literature, and Oral Traditions, National Research and Innovation Agency, 12710 Jakarta, Indonesia

ABSTRACT

This paper aims to analyze the attitude of Generation Z (Gen Z) toward religious moderation in terms of social class and their religious learning motivation. In addition, this article also aims to describe the utilization of digital space in strengthening the religious moderation of Gen Z. This is a quantitative research approach. The research questionnaire was distributed to 179 teenagers aged 16–19 living in three Central Java regions in Indonesia. This research resulted in several findings. First, Gen Z's religious moderation is in the "moderate" category, with an average score of 2.92 on a scale of 4. Most respondents agree that religious differences are not obstacles to making friends and that forcing others to believe in the same religion is not allowed. Second, Gen Z's religious moderation attitude has a very weak correlation with their religious learning motivation and social class. Third, increasing religious moderation platforms and digital media-based programs can strengthen the attitude of religious moderation among Gen Z. In conclusion, this study provides significant implications for the availability of references to religious moderation of Gen Z. It provides valuable contributions to opportunities to use digital space for positive activities for Gen Z to promote inter-religious tolerance.

Keywords: Digital media, Gen Z, religious moderation, religious tolerance, social media

INTRODUCTION

As an archipelagic state, Indonesia is very rich in various cultures, ranging from ethnic groups, languages, customs, traditions, and other cultural heritages. Indonesia is a religious country that believes in one God and allows its citizens to embrace any religion and belief. Based on a Pew

Research Center survey, Indonesia is listed as one of the most religious countries in the world (Lahitani, 2016; Nashrullah, 2020). Unfortunately, it is not listed as the most tolerant country in the world. Based on the 2015 Legatum Institute's Prosperity Index, Indonesia was ranked 123 of the most tolerant countries in the world, while Canada occupied the first rank (Lahitani, 2016). This is understandable because there are many intolerance cases in Indonesia.

Historically, intolerance is not a new problem in Indonesia because some reports picture intolerance cases from time to time. Based on the Setara Institute Report 2022, there were 175 types of religious freedom, with 333 cases. The number slightly increased compared to the previous year, which reached 171 types with 318 cases (Dzulfaroh, 2023). The most common type of violation of religious freedom in 2020 was intolerance (Guritno, 2021). The Wahid Institute also notes a gradually increasing trend of intolerance and radicalism by stating that 0.4% of Indonesian citizens have committed radical actions (Siagian, 2020).

Acts of intolerance have sadly occurred among the young generation, and there is a tendency to increase intolerance among them. According to the National Commission of Human Rights study from 2012–2018, the intolerance attitude index has strengthened to more than 50% compared to the previous intolerance index of 20% (Nugraheny, 2019). A survey conducted by the Setara Institute 2016 also showed the potential for intolerance among students. This is proven by as many as 0.3% of high school students exposed to the ideology of terrorism, and 2.4% of them experienced active intolerance (Riana, 2018).

Moreover, intolerance is identified as a consequence of the digital era (Latipah & Nawawi, 2023), which deals more with social media. Social media gives people more freedom to talk and upload materials freely. The materials could be religious issues, discrimination towards minorities, fanatism, truth claims, hate speech, or even extremist speech, which are easily accessed. As a result, social or religious conflicts can easily occur. The continuous rise of intolerance cases will tarnish the citizens' harmonious lives, especially harmonious lives among religious communities.

The policy of religious moderation is one of the government's efforts to reduce the high number of intolerance cases in Indonesia. This policy is applied in the real world and the digital space. One of the efforts made to present moderation in the digital space is by increasing digital literation, such as "ASN Penggerak Moderasi Beragama" (Driving civil servants for religious moderation), as was done by the Ministry of Religious Affairs as the leading sector of religious moderation (Ministry of Religious Affairs, 2022). The civil servants are then trained and given the task of being more active in filling and uploading digital spaces with moderate and tolerant religious materials as well as providing correct information to counter hoaxes as one of the challenges of the digital world (Suhardi et al., 2022; Ulfa, 2024). In addition, it is necessary to

increase digital literacy, transparency, and accountability of social media platforms and encourage social media platforms to offer different views (Ulfa, 2024) to minimize polarization of religious views.

Studies on religious moderation among Gen Z are often associated with the digital era, which is highly correlated with the internet and social media. Gen Z is one of the internet-affected groups as they use the internet to support their daily lives (Dumford et al., 2023). One of the impacts of information technology is the creation of exclusion and strengthening of group identity. Nowadays, Gen Z no longer asks religious leaders about doctrines or references, and they prefer to use the Google search engine as their first source instead (Faisal, 2020). This condition causes some problems related to religious moderation among Gen Z. One of the problems is the dissemination of inaccurate or misleading religious information in digital space, which can hinder moderation campaigns and increase interfaith tensions. As a result, Gen Z is often exposed to extremist views on social media, which can trigger polarization and hinder the understanding of religious moderation. Moreover, the existence and activeness of extremist groups in the digital space can influence Gen Z and hinder the understanding of religious moderation. In addition, Gen Z lacks an understanding of how to sort credible information from incredible ones. It can also obstruct the acceptance of religious moderation messages. All of these emphasize the importance of digital space in

strengthening religious moderation as one of the counter-narratives of radicalism.

On the other hand, social media in the digital era can be used as a medium for Gen Z to speak out about religious moderation. One of the religious moderation campaigns through social media is carried out by the Peace Generation (PeaceGen) platform. The organization, founded by Irfan Amalee and Eric Lincoln, promotes 12 peace values that align with the spirit of religious moderation, such as eliminating prejudice, rejecting violence, and understanding conflict, religious differences, gender, and groups. PeaceGen utilizes social media such as Facebook, Twitter, blogs, Instagram, and YouTube (Elvinaro & Syarif, 2021).

PeaceGen's research was in line with others, as it is a fact that several studies have discussed the utilization of the internet and social media platforms for religious practices. For instance, in her studies, Campbell mentioned that digital media has affected almost all aspects of human life, including communication, accessing information, sharing ideas, and religious practices (Campbell & Evolvi, 2019; Lövheim & Campbell, 2017). In addition, religious information is more accessible in the digital age, enabling remote participation in practices and communication between like-minded believers (Blondheim & Rosenberg, 2017; Mutia et al., 2024).

Previous studies show that religious moderation insight can be developed through various media, such as internet-based social media, socio-cultural activities, and formal and informal education. However,

the studies above have not examined the potential for religious moderation among Gen Z based on social class, motivation to learn religion, and geographical conditions of villages/cities. This paper tries to fill the gap because there is no study of religious moderation among Gen Z related to these three aspects. Explicitly, this article aims to (1) measure the religious moderation attitude of Gen Z; (2) examine the correlation between religious moderation attitude with social class and motivation to learn religion; (3) describe strategies that can be done to campaign for religious moderation among Gen Z.

LITERATURE REVIEW

Religious moderation is the practice of balancing religious teachings with the recognition of different views to reduce violence and extremism. In Islam, religious moderation aims to be on a moderate path, avoid violence, and encourage dialogue and tolerance (Aslamiyah et al., 2023; Untu, 2023). In Indonesia, religious moderation is important due to its heterogeneity and plurality. This concept is seen as an attempt to find agreement rather than emphasizing differences by balancing personal religious practice and respecting other religions. The Indonesian Ministry of Religious Affairs established four indicators of religious moderation-national commitment, tolerance, anti-violence, and local cultural accommodation- to evaluate the extent to which religious moderation is implemented (Ministry of Religious Affairs, 2019). National commitment is concerned with

accepting national principles, while tolerance includes an open attitude to differences. Anti-violence is associated with rejecting radicalism, and local cultural accommodation means adapting religious practices to local traditions. Religious moderation among Gen Z is influenced by sociological, digital, and ethnic diversity factors (Iswanto et al., 2021; Vukojević, 2020).

Social media plays an important role in influencing the religious attitudes and behaviors of Gen Z. Some platforms, such as Instagram, YouTube, and TikTok, provide space for flexible exploration and expression of beliefs, allowing this generation to access religious information easily. The use of social media encourages them to combine various aspects of religion personally, reflected in social advances and modern technology (Lövheim & Lundmark, 2021). In addition, the platform helps connect religious communities and supports forming a more flexible identity than traditional approaches (Kamarulzaman et al., 2015; Romario, 2022). Some studies show that exposure to diverse religious interpretations on social media can increase tolerance and reduce commitment to traditional religious practices. Gen Z seeks religious knowledge from traditional sources and social media, influenced by the Islamization of public spaces. This generation sees millennials as the new authority on religion (Febriani & Ritonga, 2022; Kertamukti, 2022). While social media can support religious moderation, there is also a risk of radicalization and intolerance (Kholis, 2021).

Several studies discussing the moderation of Gen Z on social media can be classified into at least three categories. First, descriptive studies of the moderation of the younger generation and students, as well as its measurement (Ardi et al., 2021; Sugihartati et al., 2020). Second, studies analyze the factors that strengthen and weaken the moderation of the young generation (Barkah et al., 2023; Budirahayu & Saud, 2021). Third, studies analyze the potential for radicalism and terrorism among youth from the perspectives of conservative and moderate Islamic concepts (Jubba et al., 2022). In addition to exploring the potential use of digital media in strengthening religious moderation among Gen Z, the significance of this article is to present the latest data on the level of religious moderation in Gen Z, which is associated with religious learning motivation and social classes.

Although some studies have addressed religious moderation among the younger generation, particularly related to factors strengthening or weakening moderation, as well as the potential for radicalization among youth, there is still a significant gap in the literature that examines religious moderation among Gen Z, especially in the context of the use of social media as a space for religious exploration. Most existing research focuses on the descriptive measurement of moderation levels or analyzes moderation in the context of conservative and moderate Islam without further exploring the dynamics that occur in the digital space. In addition, no studies have deeply linked the influence of social media

to Gen Z's motivation to learn religion, which is an important factor in shaping their religious attitudes, as well as how social class can affect the level of moderation applied in daily life. Previous research has also not identified how sociological, digital, and ethnic diversity among Gen Z affects their religious moderation attitudes, especially in a high-plurality country such as Indonesia. Therefore, this study is important to fill in this gap by presenting up-to-date data examining the relationship between religious moderation, religious learning motivation, and socio-economic factors among Gen Z, as well as exploring the potential of social media in strengthening or reducing religious moderation among Gen Z.

METHODS

This research used a quantitative approach to describe the attitude of religious moderation among Gen Z in 2021. The research population was adolescents aged 15-19 years who were still studying at the *madrasah aliyah* (Islamic senior high school level) in three districts in Central Java. *Madrasah aliyah* students were chosen considering research results that state that students in homogeneous educational and social environments tend to show low tolerance toward alienated groups (Ardi et al., 2021). Systematic random sampling was applied, and 179 research respondents were obtained from three regions representing rural and urban areas, with a total population of 6,624 students. The selection of 179 respondents was determined to provide an accurate estimate with an error

rate of 7.4%. This study was conducted during the COVID-19 pandemic, so it did not allow for strict sampling because most students were studying from home. In some studies, especially in certain conditions, heterogeneous populations, and varied variables, this research chose more than a 5% error margin because of limitations in controlling these variables. However, this study is still guided by error margin determination, which has to be under 10% of the prevalence because more errors can invalidate the study (Mohapatra & Mishra, 2020). The error margin of this study is below 10%, which is the maximum tolerable error rate in social research. If the error rate is to be expanded, for example, to 10%, then the sample size can be smaller (Gomm, 2008).

The next step was determining the students who became the research samples using systematic random sampling. The determination of respondents is preceded by collecting the names of all students. After the data of all students' names was obtained, the next step was determining the sample interval using $k = N / n$, where k is the sample interval, N is the population, and n is the number of samples. N is the population at one school, while n is the number of samples determined at each school, which is 30 students. The description of respondents can be seen in Table 1.

This study measured three variables: religious moderation, religious learning motivation, and social class. The three variables were also measured based on the

Table 1
Description of research respondents

Aspect	Number	Percentage (%)
Gender		
Male	78	43.6%
Female	101	56.4%
Region		
Rural	60	33.5
Urban	119	66.5
Father's educational background		
None/SD/MI equivalent	62	34.6
SMP/MTs equivalent	22	12.3
SMA/SMK/MA equivalent	66	36.9
Diploma/S1/S2/S3	29	16.2
Mother's educational background		
None/SD/MI equivalent	63	35.2
SMP/MTs equivalent	44	24.6
SMA/SMK/MA equivalent	44	24.6
Diploma/S1/S2/S3	28	15.6
Monthly Parents' Income		
Less than IDR 1.7 million	86	48.0
IDR1.71 million–2.7 million	44	24.6
IDR 2.71 million–3.7 million	26	14.5
More than IRD 3.7 million	33	12.9

respondents' presence in rural and urban areas. The attitude of religious moderation was derived from three indicators, namely (1) tolerance, (2) national commitment, and (3) anti-violence. The indicator of accommodating local culture was not studied with the assumption that Gen Z lacks an understanding of local traditions because of a decrease in love of culture and nationalism due to globalization (Agustin, 2011). Religious learning motivation variables were derived from three indicators: (1) desires and needs to learn religion, (2) expectations and appreciation of learning religion, and (3) activities and conducive environment for learning religion. The social class variable was derived from two indicators: parents' education and parents' income.

The scale used in the research instrument was a Likert scale of 1 to 4, where 1 represents the lowest score, and 4 represents the highest score. For the religious moderation attitude of Gen Z, the results of filling out questionnaires by respondents were classified into three categories, namely 1.00–2.00 (low), 2.01–3.00 (medium), and 3.01–4.00 (high). Furthermore, the instrument score calculation results were analyzed descriptively and discussed with relevant theories and results of previous studies.

Instrument validity tests have been carried out using expert validity tests. The expert validity test was carried out by four experts in their fields, who then calculated the Aiken coefficient as follows (Ulfah et al., 2020):

$$V = \sum \frac{s}{[n(c-1)]}$$

where $s = r - Lo$; Lo is the lowest validity assessment number; c is the highest validity assessment number; r is the number given by the expert.

Based on this formula, the Aiken coefficient on each instrument item lies in the interval of 0.75 - 1.00. This means that all instrument items can be declared valid. The construct validity test was conducted through a field trial of 60 students, with the results that most of the tested items were valid, and a small part was revised. The reliability test was done using the SPSS 25.0 program, and Cronbach's Alpha coefficient score was obtained at 0.795. This score shows that the instrument has generally met the reliability requirements.

The data analysis used was descriptive quantitative analysis and correlation analysis. Descriptive analysis was conducted by calculating the average score on each variable, while correlation analysis was obtained by calculating the correlation between variables. Before conducting the analysis, coding and data cleaning were carried out based on the results of the questionnaire filled out by respondents.

This study has met the ethical procedures and obtained permission from the school principal and research participants. The research instruments were addressed to people of legal age. The authors stated that they informed the participants that their anonymity and confidentiality would be guaranteed and that the data obtained would be used for scientific purposes, in addition to the absence of promised variables that could lead to the identification of participants.

RESULTS AND DISCUSSION

Religious moderation among Gen Z is very interesting to explore because the generation has two unique characteristics: a global social circle and a willingness to change the world (Wilson, 2021). These two characteristics show that Gen Z has enormous potential in determining changes in world civilization. Currently, Gen Z is beginning to dominate the world's population. The results of the 2020 census noted that Indonesia's population is dominated by Gen Z, the population group born in 1997–2012, or estimated to be 8–23 years old (Central Bureau of Statistics & Ministry of Home Affairs, 2021). Gen Z, as digital natives, plays a very strategic role in campaigning for religious moderation, a government program to create social harmonization and balance of social life.

Religious Moderation Among Gen Z

The Indonesian population, in which young people dominate, is a strategic opportunity to sow the seeds of religious moderation among young people, as well as to make them agents of religious moderation. The positive characteristics of Gen Z include being multifaceted (can do several jobs at a time), expert and familiar with gadgets and technology, critical, broadly communicative, easy to understand and appreciate the differences between other cultures (Anna & Ismail, 2023; Suhandiah et al., 2022) are the good base to implement the program among them.

The results of this study showed that Gen Z's religious moderation attitudes scored 2.92, or in the "moderate" category. Most of them are in this category, reaching 60.3%, while those with high moderation attitudes reach 38.5%, and low moderation attitudes are only 1.2%.

In terms of the national commitment indicator, the result of this study showed that most respondents (79.33%) agreed and strongly agreed that Pancasila is in line with Islamic teachings. In terms of tolerance indicators, this study showed that 84.92% of the respondents agreed and strongly agreed that religious differences are not obstacles in making friends, and 84.35% agreed and strongly agreed that they should not force others to believe in the same religion as theirs. In addition, on the indicator of anti-violence, 73.19% of respondents agreed that destroying places of worship of other religions is not justified. Thus, most research respondents have moderate religious attitudes.

The description of the religious moderation, religious learning motivation, and social class of Gen Z is illustrated in Table 2.

Table 2 also provides information that Gen Z's learning motivation is in the "high" category, with an average score of 3.19. Meanwhile, in terms of social class, 179 Gen Z students who became the research sample came from "middle" social class families, as shown by the average score of 2.16. The existence of Gen Z, the majority of whom come from a lower social class, is indicated by the fact that most of their parents earn less than 1.7 million per month, reaching 48.0%. When it comes to parents' educational

Table 2

Religious moderation, religious learning motivation, and social class of Gen Z

Variables	Indicators	Average indicator score	Average variable score
Religious moderation	Tolerance	3.20	2.92 (Moderate)
	National commitment	2.61	
	Anti-violence	2.60	
Religious learning motivation	Desire and need to learn religion	3.25	3.19 (High)
	Expectations and rewards of learning religion	3.26	
	Activities and environment conducive to religious learning	2.52	
Social class	Parents' educational background	2.28	2.16 (Moderate)
	Monthly Parents' income	1.92	

background, the majority have low education, i.e., elementary school graduates or even unschooled parents, reaching more than 34%. Similarly, when it comes to parents' occupations, most of them work as laborers, farmers, fishermen, and entrepreneurs, and most of their mothers are housewives.

The results show that a limited number of Gen Z have low religious moderation attitudes, which is only 1.2%. Even though it is small, the potential for low religious moderation in Gen Z needs to be addressed properly. The low attitude of Gen Z's religious moderation is indicated by their statement relating to religious tolerance, such as "If my friend who has a different religion/belief is sick, I do not want to visit him," there are 6.15% of the respondents "agreed" to the statement. Also, 15.08% of respondents stated "agree" with the statement "different religion/belief is an obstacle in making friends." In addition, 10.06% of the respondents did not agree to live with neighbors from different religions, and 6.71% are not willing to have friends from different religions.

In terms of the indicator of national commitment, several respondents' answers indicate their attitude toward religious moderation is still low because 21.78% of them agreed with the statement "salutation to the Indonesian flag is forbidden to do." There are 20.67% of Gen Z who "did not agree" with the statement "Pancasila as the state ideology of the Republic of Indonesia is in line with Islamic teachings." Meanwhile, there were 26.81% of the respondents "disagreed" with the statement "the act of destroying worshipping places of other religion followers is not justified." This last statement is one of the anti-violence indicators.

Correlation of Religious Moderation Attitude with Social Class and Religious Learning Motivation

Gen Z, which exists in the digital era, has implications for the closeness of their lives to the digital world. They can get a variety of knowledge easily through internet searches, like knowledge about religious moderation insights. Therefore,

digital *da'wa* is considered a solution to increasing the understanding of religious moderation and has given a new color to the world of *da'wa*, especially *da'wa* with Gen Z segmentation. The close relationship between the digital world and Gen Z is seen as a great opportunity for Islamic *da'wa* to support the importance of religious moderation for Gen Z (Rumata et al., 2021).

The potential for religious moderation, which is still low among Gen Z, should be a common concern for all parties, including the family, community, educational institutions, and even government elements. How this attitude emerges is supposed to be anticipated from the beginning before it moves in a more extreme direction. This paper correlates religious moderation attitudes with social class and religious learning motivation among Gen Z. This is based on several studies that stated that economic level affects a person's tolerance attitude (Ministry of Education and Culture, 2017; Yusuf et al., 2019). However, higher individual income and educational attainment are associated with greater religious tolerance (Yusuf et al., 2019), and respondents with middle economic status tend to be 1,070 times more likely to be quite tolerant of other religious activities (Ministry of Education and Culture, 2017). By calculating the product-moment correlation, the correlation value between the three variables is presented in Table 3.

Table 3 provides information that Gen Z's religious moderation has a positive but weak correlation with social class status and religious learning motivation. This is indicated by the correlation value between religious moderation and religious learning motivation of only 0.143 and the correlation between religious moderation and social class of only 0.190. Despite having a low correlation, the Sig. (2-tailed) shows that social class has a significant correlation with religious moderation. However, when viewed from the Sig. (2-tailed), it shows that religious moderation has a significant correlation with social class. Thus, the religious moderation attitudes of Gen Z are more influenced by other factors besides religious learning motivation and social class.

A test that examines the influence of two independent variables (religious motivation and social class) on the dependent variable of religious moderation attitude will yield consistent results. The results of the regression test are in Table 4.

Based on the analysis in Table 4, it is shown that religious motivation and social

Table 3

Correlation of religious moderation attitudes, social class, and religious learning motivation

		Religious learning motivation	Social class	Religious moderation
Religious Moderation	Pearson Correlation	0.143	0.190[*]	1
	Sig. (2-tailed)	0.056	0.011	
	N	179	179	179

Table 4
Multiple linear regression analysis

	df	SS	MS	F	Significance F	R Square
Regression	2	1.222	0.611	4.584	0.011	0.095
Residual	176	23.467	0.133			
Total	178	24.689				

class variables have a significant influence on Gen Z's religious moderation attitude. This is indicated by the Significance F value of 0.011 (less than the score of α 0.05). However, the contribution given by religious learning motivation and social class toward religious moderation attitude is relatively small; it can be seen from the R score, which only reaches 4.95%. Social class has a weak correlation with religious moderation attitudes because anyone from any social class can get the same access to education that emphasizes tolerance and inclusiveness, as well as media that promotes cross-cultural understanding. Besides that, a moderation attitude is often formed through direct interaction with people from different backgrounds, which are not limited to one particular social class. As a result, religious moderation attitude is more related to individual experiences and social environment than one's economic status or social class. At the same time, the motivation to learn religion is often based on dogmatic understandings that can hinder tolerance of other religions and beliefs.

The weak influence of religious learning motivation and social class on religious moderation is caused by several more dominant factors, such as the recognition of diverse beliefs, effective communication systems, historical experience, and the implementation of systematic and planned measures to foster tolerance (Mahmud, 2022). In addition, peer literacy and digital literacy can also improve religious moderation by providing students with critical thinking skills and access to diverse perspectives. Understanding and tolerance in a multicultural society can be fostered through the literation of digital libraries, social media literacy, literacy through webinars, and literacy through scientific papers (Nyanasuryanadi et al., 2023).

Previous studies have discussed factors influencing religious moderation, such as religiosity, demography, education, and access to information. Studies show that religiosity has a positive impact on religious moderation, with factors such as intellectuality, ideology, and religious practice supporting moderate religious views (Subchi et al., 2022). Other highly influencing factors in religious tolerance are family education, religious affiliation, ethnic affiliation, and communication level among communities (Matevski & Matevska, 2021). Other research suggested that religious tolerance is more influenced by self-confidence, self-worth, and self-acceptance. These three factors allow a person to see the uniqueness and equality of others through the prism of their individuality (Dudin et al., 2018).

A study also stated that parents' income has a negative correlation with religious moderation. This means that increasing parents' income will reduce religious moderation. In Indonesia today, many upper economic classes prefer fundamentalist religious understanding. They send their children to inclusive schools that provide fundamentalist-based religious teachings (Subchi et al., 2022). In addition to parents' income, gender contributes considerably to religious moderation in the aspect of tolerance. One study showed that female students had lower scores on religious tolerance than other students. Religious tolerance and positive attitudes toward gender equality are highly correlated (Nazar et al., 2017).

In terms of motivation to learn religion, the findings of this study corroborate the results of previous studies, which said that students' religious motivation affects their tolerance attitudes if they learn religion (Sa'diyah, 2015). Learning about religion is important to avoid the emergence of excessive religious fundamentalism, which can create exclusivity among students. A study found that religious fundamentalism and collective narcissism make individuals less likely to show interfaith contact. However, good religious beliefs and meta-religious support encourage interfaith contact (Ardi & Budiarti, 2020).

Some studies highlighted the role of education in strengthening religious moderation. Mahsusi (2023) found that students carrying out learning activities could identify and understand the values of religious moderation. Moderate and inclusive Islamic education plays an important role in eradicating extremism and encouraging religious moderation (Muchtar et al., 2022), while Hook et al. (2017) highlighted the importance of intellectual humility as a key component of religious learning motivation to foster religious tolerance. Therefore, it is important to internalize the religious moderation values in education to encourage religious tolerance attitudes (Mufi et al., 2023). These studies collectively show that religious learning motivation can be important in encouraging religious moderation.

Education has a strong influence on religious tolerance. People with higher education levels tend to be more tolerant than younger people with lower education levels (Wang & Uecker, 2017). Religious moderation through education occupies a very strategic position, considering that most Gen Z are teenagers of active school age. Formal education can be a medium of religious moderation education for Gen Z, considering that the learning space in formal education is structured, systemic, and easy to evaluate. In addition, formal and informal education can also be used as media for religious moderation education for the younger generation because these two educational paths are built on public awareness and are integrated into the community so that they are effective in stemming radical religious beliefs which are easily accessible and consumed by the community (Naj'ma & Bakri, 2021). Religious moderation

education can be internalized through curriculum development full of insights into multiculturalism (Bislimi & Buleshkaj, 2022; Tondok et al., 2022).

This article highlights its different findings from previous studies. In addition to providing information about the religious moderation level of Gen Z, which is at the "medium" level, this study also found the potential for immoderate attitudes in Gen Z. This is shown by the finding that there is still a small percentage of respondents who considered religious differences as an obstacle in making friendships. A small percentage of respondents also justified the destruction of worshiping places of other religions as a right action. Since there is still the potential for intolerance in Gen Z, it is necessary to strengthen religious moderation among them by utilizing digital space.

This study makes a significant theoretical contribution to understanding religious moderation among Gen Z, especially in Indonesia, by highlighting the complexity of factors that shape their religious tolerance attitudes. The main finding shows that although most respondents express a moderate religious attitude, there is still intolerance potential that needs to be noted. This research enriches religious moderation literature by confirming that moderation attitude is not only influenced by economic factors or motivation to study religion but also by personal experiences and inclusive social interaction. By identifying some indicators, namely national commitment, tolerance, and anti-violence, this study supports the theory that religious moderation

is a social construction that develops through interpersonal interaction and an open social environment. This finding corroborates the theory that external factors (such as digital literacy and intercultural experiences) play a greater role in shaping religious moderation attitudes among Gen Z than socio-economic status or parental educational background.

Utilization of Digital Space in Strengthening Religious Moderation of Gen Z

Gen Z is the largest generation in Indonesia, reaching 27.94% of the total population. It is an asset for the Indonesian people to voice religious moderation, not only in Indonesia but also in the world. Giving Gen Z the opportunity to express moderate religious attitudes is certainly adapted to their soul and character. Understanding their spirit and character is important to making them agents of religious moderation.

Francis and Hoefel (2018) categorized Gen Z into four main characters. First, Gen Z is "the undefined ID" that respects everyone's expression without giving a specific label. Gen Z is an open-minded generation. Second, Gen Z is "communaholic" and inclusive, and they like utilizing advanced technology to expand benefits. Third, Gen Z is "the dialoguer." They believe that dialogue as a sort of communication is important in conflict resolution. Fourth, Gen Z is "realistic;" they are more realistic and analytical in decision-making (Purwaningrum, 2021). With these four main characteristics, it is possible to make Gen Z agents of religious moderation.

Gen Z as "the communaholic" is closely related to how they are close to and can hardly be separated from the world of technology. Pew Research Center (2022) identified Gen Z as the dominant social media users (as cited by Nawi et al., 2023). Technological sophistication in the industrial era 4.0 is mostly used by the millennial generation and Gen Z/post-millennial generation (Antaufhan & Isnaini, 2023; Bayti & Ariani, 2020). Gen Z's "dependence" on digital devices is what allows them the opportunity to express moderate religion in the digital space. The 2018 Indonesian Internet Service Providers Association (2019) survey found that the majority of Gen Z are internet users. If it is classified by age, internet users from Gen Z aged 10–14 years are 66.2%, those aged 15–19 years are 91%, and those aged 20–24 years are 88.5%.

Opportunities for moderate religious expression for Gen Z are increasingly open because most have gadgets. This research also shows that as many as 94.4% of the 179 respondents who belong to Gen Z have smartphones, and 81.6% of them state that they had no problem with internet quotas. To anticipate the entry of radicalism ideology, it needs to embed moderate religious values in digital content, which has become a trending topic for Gen Z. Content about the meaning of national commitment, religious tolerance, anti-violence, and accommodation to local culture should be massively distributed. Therefore, in their study, Susilawati et al. (2021) emphasized the importance of digital literacy in Islamic

religious education, especially in the context of Gen Z's dependence on social media. This is an important strategy because Gen Z seeks religious knowledge through traditional sources and social media, which have been deeply influenced by the Islamization of public spheres (Romario, 2022).

Several groups have been leading the religious moderation movement in the digital world. For instance, the number of Islamic preachers who have switched from conventional *da'wa* media to digital *da'wa* media through social media has attracted sympathy and interest from netizens and succeeded in embracing Gen Z, such as Ustaz Abdul Somad, Khalid Basalamah, Hanan Attaki, Ustaz Adi Hidayat, Gus Baha, Gus Muwafiq, and Gus Miftah whose lectures can be accessed directly by the audience on social media and the internet (Kholis, 2021). Virtual *da'wa*, easily accessible without space and time constraints, has attracted people, especially Gen Z, whose daily lives are very close to social media and the internet. The strategy of internalizing religious moderation content in virtual *da'wa* can be done by packaging *da'wa* messages in the digital era, digitizing *da'wa* through websites, making *da'wa* videos in the digital era, and moderating *da'wa* in the form of articles (Sutrisno, 2020).

Peace Generation (PeaceGen) is one of the social media platforms that campaigns for religious tolerance. The values of peace developed through this platform are very relevant to religious moderation, such as opposing violence and the values of

religious diversity. PeaceGen leverages social media platforms such as YouTube, Instagram, Facebook, Twitter, and blogs (Elvinaro & Syarif, 2021). More platforms that promote peace and religious moderation need to be developed. The government can provide opportunities for young talents to work and innovate to create a platform for religious moderation through social media to make the religious moderation movement even more massive.

The study results indicate that Gen Z uses various social media platforms, including YouTube, TikTok, Instagram, and WhatsApp, as sources for religious learning. Gen Z's preference for social media as a source of religious learning places YouTube (79.89%), WhatsApp (67.60%), and Instagram (58.10%) as the most accessed platforms. Most of them also admitted to listening to or watching religious *da'wa* through YouTube (83.24%), Instagram (57.54%), and WhatsApp (37.99%). This result indicates that Gen Z has utilized digital space as a religious learning source. The use of this digital platform is one of the positive impacts of the development of communication technology on religious practices, namely, to express their "religious" identity and find religious groups with one vision (Campbell, 2016; Golan, 2023).

Gen Z utilizes digital space to stay connected with their same-minded friends, forming a bubble of religious content that is homogeneous in faith but diverse in other aspects (Novak et al., 2022). For example, Instagram provides a good

discussion platform and results in a better understanding of religious problems in Indonesia. Some Instagram accounts, such as @milenialislami.id, @friends_islami, @husein_hadar, @ideclare_id, and @yerry_pattinasarany, provide religious moderation messages that persuade to kindness and truth. Instagram is a social media platform that suits Gen Z's lifestyle, making it easier for the wisdom values of religious moderation to be implemented in their discussion practice and media activity (Kertamukti, 2022). Besides that, *da'wa* content in TikTok offers advantages, including affordability, creativity in delivering messages, high engagement rates, and strengthening religious identity (Aini et al., 2023). By creating and sharing contents that emphasize humanistic values and positive perception, Gen Z can foster a more tolerant religious outlook (Kertamukti, 2022).

As a generation born and raised in the internet era, Gen Z is used to solving fast-paced problems with one-click solutions. By entering a question in a search engine, hundreds or even thousands of answers can be obtained, including from social media (Bencsik et al., 2016). With the characteristics of Gen Z, which is instant and easily accepts influences from outside, it is necessary to use social media for counter-radicalism narrative campaigns. Religious moderation campaigns through social media can work as a counter-narrative to radicalism, considering that digital space is being used for radical ideas and propaganda. Research shows that within a year (2015–

2016), 106,000 pro-ISIS activists used social media as a propaganda tool, and 166 groups in social media were used to build a network (Nuruzzaman, 2018). Some religious moderation strengthening efforts in social media include collaboration with influencers, producing interactive podcasts on YouTube, making religious moderation applications based on Play Store, and several other innovations (Daud & Bafadhal, 2023). A counter-narrative of radicalism through religious moderation content in social media has been done massively. For example, when we write #moderasiberagama on Instagram, we will find 86.5 thousand posts and more than 50 tags that use the word religious moderation. This proves that through platforms such as Instagram, Gen Z shares content that persuades open discussion, promotes interfaith understanding, and highlights the importance of respecting differences. Gen Z has successfully made social media a powerful tool for supporting a more inclusive and peaceful religious life.

Furthermore, several young Indonesian preachers promote religious moderation to young audiences, including Gen Z, through social media platforms. Some of them are Habib Husein Ja'far Al Hadar (Islamic preacher), Pastor Steve Marcel (Christian preacher), and Bhante Dhirapuñño (Buddha monk). Besides, as preachers, they are Indonesian influencers with hundreds of thousands to millions of followers on their official social media accounts. The netizens have received their posts well, as reflected in the number of views, comments, and likes. In addition, these three people have made videos together and posted them on their respective social media accounts, as well as worked in collaboration with other influencers like Ria Ricis, Jirayut, and Desta.

Habib Husein Ja'far Al Hadar is actively engaged with his audiences through his official accounts. His official TikTok account has 3.2 million followers and 79 million likes. Most of his uploaded videos received positive feedback from the netizens. For instance, a video with the title "clash of religions" and the caption "*Meski tanganmu patah, ia tak boleh sampai mematahkan semangatmu utk merangkul yg berbeda utk bersama*" (Even if your hand is broken, it should not break your spirit to embrace the different to be together; Ja'far, 2024) posted on 12 October 2024, has 2.3 million views, 4,720 comments, 491,700 likes, and 18,600 saved as favorite videos. This short video presents figures of diverse religions, including pastor Steve Marcel and Bhante Dhirapuñño, and the message in the content asks the audience to respect religious differences.

Steve Marcel has actively posted videos on his social media platforms that promote tolerance and religious moderation. His official Instagram account @STEVEMARCEL has 459,000 followers. Meanwhile, his official TikTok account has 389,200 followers and 4.8 million likes. One of his posts, "New Agent for the New War," has 3.4 million views, 255,000 likes, and 4,104 comments (Marcel, 2024). In this video, Steve Marcel and Ria Ricis, another prominent influencer, talk about how people

prepare to buy clothes before celebrating Eid Al Fitr; this implies that non-Muslims are also happy to welcome Eid.

The official IG account of Bhante Dhirapuñño has 3,124 posts and 111,000 followers. One of his uploaded photo with the title "Nyalakan lilin di vihara X, Nyalakan lilin di gereja V", and with a caption "*Kadangkala menyalakan penerangan gak harus di rumah sendiri, Ketika rumah tetangga butuh penerangan dan kita bisa, maka lakukan, gak ada salahnya kan*???" (Sometimes turning on the lights does not have to be done in your own house. When your neighbor's house needs lighting, and we can then do it, there is nothing wrong with that, right?) (Dhirapuñño, 2024) received 18,000 likes, 325 comments, and 338 reposted. This message implies that we should help others regardless of their religious backgrounds.

Algorithms that emphasize content popularity and the speed of information often cause religious moderation discussions to become fragmented and limited to slogans or short statements. These algorithms can strengthen religious moderation narration by delivering tolerance and inclusivity messages, but they can also exacerbate polarization if they highlight extremist or controversial content. A study analyzed religious moderation tweets on Twitter from April 2022 to March 2023. There were 16,407 tweets that were posted about religious moderation, of which 62% had a negative sentiment. This negative sentiment reflects critical views, criticism, or rejection of religious moderation. The study also

concluded that echo chambers and social media algorithms stimulate liberal people to become more liberal and radical/extreme ones to become more radical and extreme (Achfandhy et al., 2023).

This study provides a significant theoretical contribution to understanding the role of digital space in strengthening religious moderation among Gen Z. As a generation highly connected to digital technology; Gen Z also utilizes various social media platforms to explore and express moderate religious values. This study corroborates the theory that stated digital space, with its interactive and rapid nature in disseminating information, can effectively promote religious moderation, especially if the content prioritizes some values, such as tolerance, peace, and respect for diversity. By identifying Gen Z behavior, which tends to use social media such as YouTube, Instagram, and TikTok in searching for religious learning, this study expands our understanding of the religious moderation dynamics in the digital era. Moreover, this study highlights the importance of digital literacy and collaboration between preachers and influencers in effectively disseminating religious moderation messages, creating a counter-narrative to the growing online radicalization.

CONCLUSION

The attitude of Gen Z is one of the crucial elements for achieving religious moderation in Indonesia's multicultural society due to their significant proportion of the population, as it is a fact that there are several intolerant

actions occurring in the country. The results of this study show that Gen Z's religious learning motivation is at a high level, while their religious moderation attitude is at a medium level. Although their religious learning motivation is high, this does not necessarily mean they have a stronger religious moderation attitude. On the other hand, social class, which is measured through the educational background and monthly salary of Gen Z parents, is at a medium level, and the score is lower and the religious moderation attitude. It means that social class has a weak correlation with religious moderation attitudes. This indicates that other factors, such as personal education and experiences, may influence one's religious moderation attitude more.

As digital natives born in an era of widespread technology and information, Gen Z is the right audience for religious moderation campaigns on digital platforms. Gen Z utilizes social media as a religious learning source significantly, with platforms such as YouTube, Instagram, and WhatsApp being the top three choices. They use social media not only to access religious content but also to participate in discussions that promote religious moderation and reject radicalism. However, although social media offers great potential to support religious moderation campaigns, there are challenges, such as the fragmentation of messages and the polarization risk due to algorithms that amplify extremist content. As such, it is important to manage social media usage to support campaigns of inclusivity and tolerant values among Gen Z.

Implications for Theory and Practice

This study has important implications regarding the utilization of digital platforms to promote religious moderation among Gen Z, with a focus on interfaith tolerance as a counter-narrative to extremism. The findings provide a theoretical contribution to understanding Gen Z's religious moderation attitudes in digital space and practical implications for policymakers and social media users. The religious moderation campaign in digital space needs to be arranged and planned effectively to increase religious learning motivation and promote moderation values through engaging content.

Limitations and Recommendations for Future Study

This study has limitations related to the limited number of participants, so it does not generally represent the Central Java population. Future studies should involve a wider range of respondents and use a mixed-method approach, as well as more representative sampling techniques, such as the stratified sampling technique. Future research also needs to explore the use of digital platforms by the young generation in supporting religious activity and analyze which platforms are most effective in delivering religious moderation messages. In addition, more studies are needed on the role of algorithms in disseminating religious moderation content and how policy intervention or platform design can reduce polarization and the spread of extremism. Longitudinal studies that

monitor changes in religious moderation attitudes among Gen Z related to digital campaigns are also needed to evaluate the effectiveness of this strategy.

ACKNOWLEDGEMENT

REFERENCES

Achfandhy, M. I., Khoirurrijal, & Ariyanto, B. (2023). *Kontestasi wacana moderasi beragama di media sosial* [Contestation of religious moderation discourse in social media]. Literasi Nusantara.

Agustin, D. S. Y. (2011). Penurunan rasa cinta budaya dan nasionalisme generasi muda akibat globalisasi [The decline of nationalism and love of culture because of globalization]. *Jurnal Sosial Humaniora*, *4*(2), 177-185.

Aini, A. H., Rahman, A. C. A. F., & Sari, R. W. (2023). Benefits of da'wah content TikTok for Generation Z. *Proceeding Conference on Da'wah and Communication Studies*, (2), 17-24. https://doi.org/10.61994/cdcs.v2i1.90

Anna, N. E. V., & Ismail, N. (2023). Chunking virtual literacy instruction on TikTok for Z generation. *Library Hi Tech News*, *40*(5), 13-14. https://doi.org/10.1108/LHTN-12-2022-0135

Antaufhan, V. J., & Isnaini, S. (2023). Digital marketing strategy public relations miracle aesthetic clinic Surabaya via instagram @miracle_surabaya. *Jurnal Media dan Komunikasi*, *3*(2), 136-151. https://doi.org/10.20473/medkom.v3i2.42171

Ardi, R., & Budiarti, D. (2020). The role of religious beliefs and collective narcissism in interreligious contact on university students. *Heliyon*, *6*(9), Article e04939. https://doi.org/10.1016/j.heliyon.2020.e04939

Ardi, R., Tobing, D. H., Agustina, G. N., Iswahyudi, A. F., & Budiarti, D. (2021). Religious schema and tolerance towards alienated groups in Indonesia. *Heliyon*, *7*(7), Article e07603. https://doi.org/10.1016/j.heliyon.2021.e07603

Aslamiyah, N., Amalia, S. T., Annisah, A., Mawaddah, I., & Darlis, A. (2023). Moderasi beragama dalam prespektif Al-Qur'an dan Hadis [Religious Moderation in the perspective of Quran and Hadits]. *Mimbar Kampus: Jurnal Pendidikan dan Agama Islam*, *22*(1), 235-243.

Barkah, Q., Cholidi, C., Rochmiyatun, S., Asmorowati, S., & Fernando, H. (2023). The manipulation of religion and the legalization of underage marriages in Indonesia. *Samarah*, *7*(1), 1-20. https://doi.org/10.22373/sjhk.v7i1.13316

Bayti, T. N., & Ariani, D. (2020). *Gagasan milenial & generasi Z untuk Indonesia emas 2045* [Millenial ideas and Generation Z for Golden Indonesia 2045] (H. C. Pereira, A. E. F. Seac, & Y. A. Siki, Eds.). Fianosa Publishing.

Bencsik, A., Horváth-Csikós, G., & Juhász, T. (2016). Y and Z Generations at workplaces. *Journal of Competitiveness*, *8*(3), 90-106. https://doi.org/10.7441/joc.2016.03.06

Bislimi, F., & Buleshkaj, O. (2022). The quality teaching and learning standard: Level of understanding and implementation by school principals in Kosovo. *International Journal of Innovation and Learning*, *32*(3). https://doi.org/10.1504/IJIL.2022.10050668

Blondheim, M., & Rosenberg, H. (2017). Media theology: New communication technologies as religious constructs, metaphors, and experiences. *New Media and Society*, *19*(1), 43-51. https://doi.org/10.1177/1461444816649915

Budirahayu, T., & Saud, M. (2021). Proposing an integrated multiculturalism learning system: A study from Indonesian schools. *Asia-Pasific Education Researcher, 20,* 141-152. https://doi.org/10.1007/s40299-020-00521-1

Campbell, H. A. (2016). Introduction: The rise of the study of digital religion. In *Digital Religion: Understanding religious practice in new media worlds* (pp. 1-21). Routledge. https://doi.org/10.4324/9780203084861

Campbell, H. A., & Evolvi, G. (2019). Contextualizing current digital religion research on emerging technologies. *Human Behavior and Emerging Technologies*, *2*(1), 5-17. https://doi.org/10.1002/hbe2.149

Central Bureau of Statistics & Ministry of Home Affairs. (2021). *Hasil sensus penduduk 2020* [2020 Population census results]. Central Bureau of Statistics.

Daud, S. M., & Bafadhal, M. I. (2023). Strengthening religious moderation in social media to fight online radicalism. *Indonesian Journal of Islamic Education and Local Culture*, *1*(2), 75-86. https://doi.org/10.22437/ijielc.v1i2.30768

Dhirapuñño, B. [@dhira_punno]. (2024, January 3). *Nyalakan lilin di Vihara X, nyalakan lilin di Gereja V* [Light a candle at Temple X, light a candle at the Church V]. Retrieved November 6, 2024, from https://www.instagram.com/dhira_punno/reel/C1oaiZ9BrXj/?hl=en

Dudin, M. N., Protsenko, I. O., Frolova, E. E., Voykova, N. A., & Hokonov, A. A. (2018). Formation of religious tolerance among undergraduates in the multireligious environment of university. *European Journal of Science and Theology*, *14*(2), 77-87.

Dumford, A. D., Miller, A. L., Lee, C. H. K., & Caskie, A. (2023). Social media usage in relation to their peers: Comparing male and female college students' perceptions. *Computers and Education Open*, *4*, Article 100121. https://doi.org/10.1016/j.caeo.2022.100121

Dzulfaroh, A. N. (2023, February 1). *Geser Jabar, Jatim jadi provinsi dengan pelanggaran kebebasan beragama tertinggi 2022* [East Java replaces West Java as province with highest religious freedom violations in 2022] (H. Sari, Ed.). Kompas.com. https://www.kompas.com/tren/read/2023/02/01/193000965/geser-jabar-jatim-jadi-provinsi-dengan-pelanggaran-kebebasan-beragam

Elvinaro, Q., & Syarif, D. (2021). Generasi milenial dan moderasi beragama: Promosi moderasi beragama oleh Peace Generation di media sosial [Millenial Generation and religious moderation: Promoting religious moderation in social media by Peace Generation]. *Jurnal Ilmu Sosial dan Ilmu Politik*, *11*(2), 195-218. https://doi.org/10.15575/jispo.v11i2.14411

Faisal, M. (2020). Manajemen pendidikan moderasi beragama di era digital [Management of religious moderation education in the digital era]. *Journal of International Conference on Religion, Humanity and Development*, *1*(1), 195-202.

Febriani, S. R., & Ritonga, A. W. (2022). The perception of millennial generation on religious moderation through social media in the digital era. *Millah: Journal of Religious Studies*, *21*(2), 313-334. https://doi.org/10.20885/millah.vol21.iss2.art1

Francis, T., & Hoefel, F. (2018, November 12). *True Gen': Generation Z and its implications for companies.* McKinsey & Company. https://www.mckinsey.com/industries/consumer-packaged-goods/our-insights/true-gen-generation-z-and-its-implications-for-companies

Golan, O. (2023). Introduction: Digital youth and religion. *Religions*, *14*(6), Article 704. https://doi.org/10.3390/rel14060704

Gomm, R. (2008). *Social research methodology: A critical introduction*. Red Globe Press.

Guritno, T. (2021, April 6). *Riset Setara Institute: Intoleransi atas kebebasan beragama-berkeyakinan paling banyak terjadi pada 2020* [Setara Institute Research: Most prevalent intolerance towards freedom of religion and belief occurred in 2020] (K. Erdianto, Ed.). Kompas.com. https://nasional.kompas.com/read/2021/04/06/18065451/riset-setara-institute-intoleransi-atas-kebebasan-beragama-berkeyakinan

Hook, J. N., Farrell, J. E., Johnson, K. A., Van Tongeren, D. R., Davis, D. E., & Aten, J. D. (2017). Intellectual humility and religious tolerance. *The Journal of Positive Psychology*, *12*(1), 29-35. https://doi.org/10.1080/17439760.2016.1167937

Indonesian Internet Service Providers Association. (2019). *Penetrasi dan profil perilaku pengguna internet Indonesia* [Profile of internet users in Indonesia: Penetration and behavioral insights]. https://diskominfo.purwakartakab.go.id/panel/assets/files/547e1e75b59e668bda451e92f9246d00.pdf

Iswanto, A., Haryanto, J. T., Noviani, N. L., Mustolehudin, Rosidin, Basid, A., Nugroho, N. D., Muslim, A., Paisal, Santoso, A. G., Dewi, R. S., Zakiah, Marannu, B., Hidayat, R. A., & Saepudin, J. (2021). *Moderasi beragama di media sosial* [Religious moderation in social media] (A. Iswanto, Ed.). Arti Bumi Intaran.

Ja'far, H. [@huseinjafar] (2024, October 11). *Clash of Religion*. Retrieved November 7, 2024, from https://www.tiktok.com/@huseinjafar/video/7424400292344499462?lang=en

Jubba, H., Awang, J., Qodir, Z., Hannani, & Pabbajah, M. (2022). The contestation between conservative and moderate Muslims in promoting Islamic moderatism in Indonesia. *Cogent Social Sciences*, *8*(1), Article 2116162. https://doi.org/10.1080/23311886.2022.2116162

Kamarulzaman, Y., Veeck, A., Mumuni, A. G., Luqmani, M., & Quraeshi, Z. A. (2015). Religion, markets, and digital media: Seeking halal food in the U.S. *Journal of Macromarketing*, *36*(4), 400-411. https://doi.org/10.1177/0276146715622243.

Kertamukti, R. (2022). Instagram religious moderation dialogue space for generation Z. *Nyimak: Journal of Communication*, *6*(2), 229-250. https://doi.org/10.31000/nyimak.v6i2.6670

Kholis, N. (2021). Dakwah virtual generasi Z dan moderasi beragama [Virtual da'wa of Generation Z and religious moderation]. *Journal of Da'wah and Communiaction*, *1*(2), 155-168.

Lahitani, S. (2016, December 22). *Indonesia negara paling religius di dunia, tapi kenapa intoleran?* [Indonesia is the most religious country in the world, but why it is intolerant?]. Liputan 6. https://www.liputan6.com/citizen6/read/2685341/indonesia-negara-paling-religius-di-dunia-tapi-kenapa-intoleran

Latipah, H., & Nawawi. (2023). Perilaku intoleransi beragama dan budaya media sosial: Tinjuan bimbingan literasi media digital di masyarakat [Religious intolerance behavior and social media culture: A review of digital media literacy guidance in the society]. *Al Isyraq: Jurnal Bimbingan, Penyuluhan dan Konseling Islam*, *6*(2), 21-42. https://doi.org/10.59027/alisyraq.v6i2.336

Lövheim, M., & Campbell, H. A. (2017). Considering critical methods and theoretical lenses in digital religion studies. *New Media and Society, 19*(1), 5-14. https://doi.org/10.1177/1461444816649911

Lövheim, M., & Lundmark, E. (2021). Identity. In *Digital Religion* (2nd ed., p. 15). Routledge. https://doi.org/10.4324/9780429295683-5

Mahmud, M. N. (2022). Religious moderation: Epistemological Perspective. *Jurnal Diskursus Islam*, *10*(1), 82-88. https://doi.org/10.24252/jdi.v10i1.28809

Mahsusi, M., Hudaa, S., Nuryani, N., Bahtiar, A., & Subuki, M. (2023). Identifying values of religious

moderation through learning activities. *Al-Qalam*, *29*(1), 61-70.

Marcel, S. [@stevemarcelofficial]. (2024). *New Agent for the New War.* Retrieved November 6, 2024, from https://www.tiktok.com/@stevemarcelofficial?lang=en

Matevski, Z., & Matevska, D. (2021). The effects of societal factors on religious tolerance in students of the philosophical faculties in Skopje and Tetovo (R. North Macedonia). In M. Jevtić & M. Veković (Eds.), *Politology of religion. A Biannual Conference 2021* (pp. 27-43). Center for Study of Religion and Religious Tolerance University of Belgrade.

Ministry of Education and Culture. (2017). *Analisis sikap toleransi di Indonesia dan faktor-faktornya* [Analysis of tolerance attitudes in Indonesia and its factors]. Center for Educational and Cultural Data and Statistics. https://repositori.kemdikbud.go.id/22832/

Ministry of Religious Affairs. (2019). *Moderasi beragama* [Religious moderation]. Research, Development, and Training Agency, Ministry of Religious Affairs Republic Indonesia. https://balitbangdiklat.kemenag.go.id/upload/files/MODERASI_BERAGAMA.pdf

Ministry of Religious Affairs. (2022, September 5). *Kemenag mesti siapkan penggerak penguatan moderasi beragama di dunia digital* [Ministry of Religious Affairs must prepare initiatives to strengthen religious moderation in the digital realm]. https://kemenag.go.id/daerah/kemenag-mesti-siapkan-penggerak-penguatan-moderasi-beragama-di-dunia-digital-dyc82g

Mohapatra, S., & Mishra, B. (2020). Sampling in research series 2: Basic concepts in estimating sample size. *Journal of Advanced Research in Medical Science & Technology*, *7*(2), 19-21. https://doi.org/10.24321/2394.6539.202008

Muchtar, C., Noviani, D., Mardeli, Mutiara, & Dey, M. (2022). Religious moderation in the framework of

life. *International Journal of Islamic Education, Research and Multiculturalism, 4*(2), 135-149. https://doi.org/10.47006/ijierm.v4i2.142

Mufi, A. M., Elhady, A., & Mursalim, M. (2023). Section articles internalization of religious moderation values: Active tolerance and social harmony in education in Indonesia. *El-Tarbawi*, *16*(1), 1-32. https://doi.org/10.20885/tarbawi.vol16.iss1.art1

Mutia, F., Masrek, M. N., Baharuddin, M. F., Shuhidan, S. M., Soesantari, T., Yuwinanto, H. P., & Atmi, R. T. (2024). An exploratory comparative analysis of librarians' views on AI support for learning experiences, lifelong learning, and digital literacy in Malaysia and Indonesia. *Publications*, *12*(3), Article 21. https://doi.org/10.3390/publications12030021

Naj'ma, D. B. A., & Bakri, S. (2021). Pendidikan moderasi beragama dalam penguatan wawasan kebangsaan [Religious moderation education in strengthening national insight]. *Academica*, *5*(2), 421-434. https://doi.org/10.22515/academica.v5i2.4919

Nashrullah, N. (2020, August 25). *Negara paling religius versi Pew, berapa nilai Indonesia?* [The most religious country according to Pew, what is Indonesia's score?]. Republika. https://www.republika.co.id/berita/qfm72k320/negara-paling-religius-versi-pew-berapa-nilai-indonesia

Nawi, A., Khamis, N. Y., Hussin, Z., & Aziz, M. N. A. (2023). Exploring disruptive adolescent behaviours on social media: A case study during the times of crisis. *Pertanika Journal of Social Science and Humanities*, *31*(4), 1343-1362. https://doi.org/10.47836/pjssh.31.4.01

Nazar, N., Österman, K., & Björkqvist, K. (2017). Religious tolerance, gender equality and bellicose attitudes: A comparative study of three educational systems in Pakistan. *European Journal of Social Sciences Education and*

Research, *5*(3), 69-84. https://doi.org/10.26417/ejser.v11i1.p126-135

Novak, C., Haselbacher, M., Mattes, A., & Limacher, K. (2022). Religious "Bubbles" in a superdiverse digital landscape? Research with religious youth on instagram. *Religions*, *13*(3), Article 213. https://doi.org/10.3390/rel13030213

Nugraheny, D. E. (2019, November 15). *Komnas HAM: Kecenderungan sikap intoleransi menguat di kalangan anak muda terdidik* [National Commision on Human Rights: Komnas HAM: Tendency towards intolerance is increasing among educated youth] (D. Meiliana, Ed.). Kompas.com. https://nasional.kompas.com/read/2019/11/15/18195711/komnas-ham-kecenderungan-sikap-intoleransi-menguat-di-kalangan-anak-muda?page=all

Nuruzzaman, M. (2018). Terorisme dan media sosial sisi gelap berkembangnya teknologi informasi komunikasi [Terrorism and social media; the dark side of the development of information and communication technology]. *Syntax Literate: Jurnal Ilmiah Indonesia*, *3*(9), 61-76.

Nyanasuryanadi, P., Kurdi, M. S., Kurdi, M. S., Cakranegara, P. A., Pratama, D., & Nilawati, N. (2023). Mainstreaming the value of religious moderation by teachers in the digital era. *Al-Ishlah: Jurnal Pendidikan*, *15*(2), 1357-1368. https://doi.org/10.35445/alishlah.v15i2.3198

Purwaningrum, E. K. (2021). Tantangan dan penguatan karakter Pancasila pada generasi pasca milenial (Generasi Z) [Challenges and strengthening of Pancasila character in the post-millennial generation (Generation Z)]. In W. L. Hutasoit (Ed.), *Pancasila di era milenial* (pp. 19-36). Media Sains Indonesia. http://repository.untag-smd.ac.id/id/eprint/678

Riana, F. (2018, May 20). *Setara Institute: Terorisme bermula dari intoleransi* [Setara Institute: Terrorism starts from intolerance]. Tempo. https://www.tempo.co/hukum/setara-institute-terorisme-bermula-dari-intoleransi-922322

Romario. (2022). Generation Z and the search for religious knowledge on social media. *HIKMATUNA: Journal for Integrative Islamic Studies*, *8*(2), 144-156. https://doi.org/10.28918/hikmatuna.v8i2.6062

Rumata, F. A., Iqbal, M., & Asman, A. (2021). Dakwah digital sebagai sarana peningkatan pemahaman moderasi beragama di kalangan pemuda [Digital da'wa as a means of increasing understanding of religious moderation among youth]. *Jurnal Ilmu Dakwah*, *41*(2), 172-181. https://doi.org/10.21580/jid.v41.2.9421

Sa'diyah, R. (2015). The influence of religious motivation and students learning outcomes in Islamic religious education towards students tolerance attitude. *Tarbiya: Journal of Education in Muslim Society*, *2*(1), 70-82. https://doi.org/10.15408/tjems.v2i1.1672

Siagian, H. (2020, January 18). *Survei Wahid Institute: Intoleransi-radikalisme cenderung naik* [Wahid Institute Survey: Intolerance-radicalism tends to rise]. Media Indonesia. https://mediaindonesia.com/politik-dan-hukum/284269/survei-wahid-institute-intoleransi-radikalisme-cenderung-naik

Subchi, I., Zulkifli, Z., Latifa, R., & Sa'diyah, S. (2022). Religious moderation in Indonesian Muslims. *Religions*, *13*(5), Article 451. https://doi.org/10.3390/rel13050451

Sugihartati, R., Suyanto, B., Hidayat, M. A., Sirry, M., & Srimulyo, K. (2020). Habitus of institutional education and development in intolerance attitude among students. *Talent Development and Excellence*, *12*(1), 1965-1979.

Suhandiah, S., Suhariadi, F., Yulianti, P., Wardani, R., & Muliatie, Y. E. (2022). Online learning satisfaction in higher education: What are the determining factors? *Cakrawala Pendidikan*, *41*(2), 351-364. https://doi.org/10.21831/cp.v41i2.35724

Suhardi, U., Anwar, M. K., & Wibawa, Y. Y. (2022). Tantangan moderasi beragama dalam disrupsi teknologi [The challenge of religious moderation in the technological disruption]. *Widya Aksara: Jurnal Agama Hindu*, *27*(2), 257-268. https://doi.org/10.54714/widyaaksara.v27i2.198

Susilawati, S., Chakim, A., Hambali, M., Islamy, M. I., & Rahmaniah, A. (2021). The urgency of digital literacy for generation Z in improving learning of Islamic religious education. *Library Philosophy and Practice (e-Journal)*, Article 5143.

Sutrisno, E. (2020). Moderasi dakwah di era digital dalam upaya membangun peradaban baru [Moderation of da'wa in the digital era to build a new civilization]. *Al-Insan*, *1*(1), 56-83.

Tondok, M. S., Suryanto, S., & Ardi, R. (2022). Intervention program to reduce religious prejudice in education settings: A scoping review. *Religions*, *13*(4), Article 299. https://doi.org/10.3390/rel13040299

Ulfa, M. (2024). Menjaga moderasi beragama di era digital: Tantangan dan strategi menghadapi teknologi [Maintaining religious moderation in the digital era: Challenges and strategies for dealing with technology]. *Book Chapter of Proceedings Journey-Liaison Academia And Society*, *1*(1), 43-63.

Ulfah, A. A., Kartono, K., & Susilaningsih, E. (2020). Validity of content and reliability of inter-rater instruments assessing ability of problem solving. *Journal of Research and Educational Research Evaluation*, *9*(1), 1-7. https://doi.org/10.15294/jere.v9i1.40423

Untu, H. I. (2023). Laity and the integration of the concept of religious moderation in planning pastoral work programs at the Holy Trinity Parish in Paslaten. *International Journal of Social Service and Research*, *3*(12), 3063-3070. https://doi.org/10.46799/ijssr.v3i12.622

Vukojević, B. (2020). The relationship of generation Z with religion. *Politea*, *10*(20), 139-152. https://doi.org/10.5937/POLITEIA0-28829

Wang, X., & Uecker, J. E. (2017). Education, religious commitment, and religious tolerance in contemporary China. *Review of Religious Research*, *59*(2), 157-182. https://doi.org/10.1007/s13644-017-0286-5

Wilson, B. (2021). *Generation Z: Born for the storm*. Empowered Books.

Yusuf, A. A., Shidiq, A. R., & Hariyadi, H. (2019). On socio-economic predictors of religious intolerance: Evidence from a large-scale longitudinal survey in the largest Muslim democracy. *Religions*, *11*(1), Article 21. https://doi.org/10.3390/rel11010021

Unveiling Key Factors Shaping Strategically Empowered Saudi Arabia's Academic Employee Career Trajectories

Ahmed Khalid Alrashedi

Human Resource Management Department, University of Jeddah, 23218 Jeddah, Saudi Arabia

ABSTRACT

This study examines the key elements that impact the career paths of academic staff in Saudi Arabia, with the goal of understanding the methods by which strategic empowerment can be achieved within the academic sector. The research utilizes the Decision-Making Trial and Evaluation Laboratory (DEMATEL) method to examine the connections between important factors that influence the advancement of an academic career. An intentional sample consisting of 30 academic staff members, each with more than ten years of experience at Saudi universities, offers valuable insights into the complex nature of career growth within the Saudi Arabian academic environment. The study outlines five key characteristics that are crucial for the strategic empowerment of academic employees: career goal progress, professional competence development, promotion speed, pay increase, and mentorship. The research analyses these factors thoroughly to reveal the important effects and complex dynamics that affect academic career paths. Significantly, elements such as the improvement of professional skills and the rate of promotion are identified as key determinants, emphasizing the significance of enhancing abilities and advancing careers within the academic environment in Saudi Arabia. The results of our research provide significant knowledge for academics, policymakers, and professionals, giving a thorough grasp of the elements that influence strategic empowerment in the academic sector in Saudi Arabia.

Keywords: Career empowerment, career growth, promotion speed, skill

INTRODUCTION

Saudi Arabia's workforce has shifted from being predominantly made up of foreign expatriates to being primarily comprised of Saudi nationals (Samarin & Al-Asfour, 2023). This has been achieved through nationalization programs that mandate companies to employ a specific proportion

of Saudi citizens. The government is actively promoting female participation in the workforce by providing opportunities in various sectors and striving for gender integration as part of the Saudi Vision 2030. The work environment and benefits of Saudi Arabian higher education are heavily influenced by Islamic traditions and the strict regulations governing employment in the state sector (Salam, 2022). In Saudi Arabia, the salaries, benefits, and career growth opportunities for Saudi nationals are generally more structured and predictable than those of Western academic institutions. One reason for this is the emphasis on seniority and rank over performance (Tlaiss & Elamin, 2016).

Supplementary forms of compensation, such as allowances, incentives, and paid sabbatical leave, can greatly augment the base wages of academic staff. The Ministry of Civil Service is responsible for developing and implementing employment policies and regulations (Salam, 2022). The Royal Decree determines the remuneration rates for civil servants No. A/93 on Civil Service, in accordance with their rank. Universities and other higher education institutions are commonly classified as parastatal organizations. Civil servants have their own unique pay scale and employment regulations, and they are typically associated with a government department or ministry, either directly or indirectly. Universities are affiliated with the Ministry of Education.

Job seekers in Saudi Arabia have a range of preferences regarding job seeking, job characteristics, and career goals (Thompson & Almoaibed, 2021). The future of Saudi Arabia hinges on the well-educated and highly skilled youth who will comprise the workforce of tomorrow. Given the current state of globalization and the challenges posed by the rapidly growing economy and declining oil revenues, younger individuals are increasingly inclined to pursue employment opportunities in the public and private sectors. Factors that can influence this include an individual's educational background, the specific circumstances of their job, and the recent trends in the job market. Enhancing prospects for professional advancement in these industries is expected to have a positive impact on both present and future quality of life. The ambitious young generation has lofty professional aspirations and objectives. It is clear that individuals in every society aspire to pursue careers that offer financial stability, job security, social status, and opportunities for advancement. Academic areas are highly regarded in Saudi Arabia, which is why young Saudi students and job seekers have high expectations for their future careers. Many individuals aspire to secure professional or managerial positions that can enhance their career paths. Many individuals are interested in pursuing careers that align with their qualifications and personal interests. This holds particular significance for individuals who possess higher education credentials.

Saudi Arabia's academic staff aspirations include a secure and successful career. Currently, the career advancement and employment landscape for young individuals is rather ambiguous. This

is seen as the result of an imbalance in the job growth rate in KSA compared to the increasing numbers of well-educated Saudis, job availability, and the nature of some existing jobs that foreign workers largely hold.

Based on previous research, it has been found that the labor force in Saudi Arabia is comprised of over 27% foreign workers (Abdulrahman, 2024). The Saudi government has implemented measures to increase the employment of Saudi nationals in the workforce. This initiative, commonly referred to as "Saudization," involves providing incentives and setting quotas for companies to hire more Saudi nationals (Sobaih, 2023). This initiative is timely as it focuses on enhancing citizens' work ethic and job opportunities, particularly the younger generation, to help them achieve their career aspirations. The main objective of this study is to identify the key factors that shape the career trajectories of academically empowered employees in Saudi Arabia.

LITERATURE REVIEW

Numerous research studies have been conducted on the issues related to the career paths of academic staff in Saudi Arabia. The study by Ratyan and Mohammad (2016) revealed no significant statistical relationship between the dimensions of university teaching and the career paths of Saudi Arabia's academic staff. However, it is important to note that a variety of factors influence the career trajectories of these staff members. Studies have shown that implementing high-performance human resource practices (HPHRPs) such as internal mobility, recognition, and training can have a positive effect on the career success and research performance of faculty members (Alshaikhmubarak et al., 2020). Ensuring job satisfaction among academic staff in Saudi Arabia's Eastern Province is of utmost importance for the ongoing enhancement of academic institutions and professional growth (El-Zoubi & Wirba, 2017). Female medical graduates in Saudi Arabia encounter obstacles to progress in academic medicine, such as family obligations and a dearth of mentoring connections (Habib et al., 2022).

In a study conducted by Alshammari (2023), the impact of communication skills and job requirements on professional career development at the University of Hail, Saudi Arabia, is explored. The study found that job requirements have a significant impact on students' career development, while academic performance also plays a significant role in shaping their career prospects.

In a recent study conducted by Alharthey et al. (2022), the researchers explored the factors influencing employee satisfaction and retention in the educational sector in Saudi Arabia. The findings revealed that work engagement, co-worker relationships, and a supportive work environment are crucial in enhancing employee satisfaction. The study found that work engagement, co-worker relationships, and a supportive work environment influence employee satisfaction in the educational sector in Saudi Arabia.

In a recent study, Alshaikhmubarak and colleagues (2020) examined the effects of high-performance human resource practices (HPHRPs) on the research performance and career success of academics. The researchers discovered that internal mobility and recognition, two specific HPHRPs, significantly influenced the career success of faculty members. Furthermore, they found that these effects were mediated by research performance.

In their study, Gorondutse and colleagues (2018) examined the impact of leadership and training on employee performance in the higher education sector of the Kingdom of Saudi Arabia (KSA), with a particular focus on the moderating role of role ambiguity. The study found that leadership and training have a notable positive influence on employee performance within the higher education sector of Saudi Arabia. The presence of role ambiguity has a moderating effect on the connection between different leadership styles and the performance of employees, ultimately having a negative impact on this relationship.

In their study, Singh et al. (2022) investigated the impact of education, training, and e-learning (ETL) on empowering Saudi society and promoting sustainable employment in Saudi Arabia. The study revealed that education, training, and e-learning play a crucial role in promoting social empowerment and fostering sustainable employment opportunities in Saudi Arabia. The role of government policies in relation to education, training, e-learning, sustainable employment generation, and social empowerment has been recognized as crucial.

There is a research gap in the current understanding of the factors that contribute to a supportive environment for academic employees in Saudi Arabia. Several studies have emphasized the significance of supportive institutional cultures and leadership practices. However, there is a need for comprehensive frameworks that clarify the essential elements of these environments and their influence on employee empowerment and career development. In order for institutions to effectively foster academic talent, it is crucial to have a comprehensive understanding of the factors that contribute to a supportive environment. Without this understanding, it becomes difficult to develop policies and practices that are effective in nurturing academic talent. Furthermore, existing research lacks integration and causal understanding of the interaction among supportive environments, effective supervision, continuous learning opportunities, and academic employee career trajectories in Saudi Arabia. Although researchers often study these factors separately, it is important to develop comprehensive frameworks that clarify how they are interconnected and influence each other. It is crucial to comprehend the role of supportive environments in promoting effective supervision, improving access to continuous learning opportunities, and ultimately impacting career trajectories. This understanding is vital for developing evidence-based strategies to empower academic employees.

Theoretical and Conceptual Developments

Career theories provide insight into the intricate nature of career choice and development. In line with this, "Career Construction Theory (CCT)" perceives career development as a gradual process of constructing an individual's career story or narrative, drawing from personal experiences, interests, and values (Nalis et al., 2022; Ulaş-Kılıç & Peila-Shuster, 2023). The significance of meaning-making and identity in career decision-making is emphasized (Yates, 2020).

The CCT theory is widely recognized for its comprehensive analysis of various aspects of career development. Studies have shown the importance of CCT in understanding subjective career success, adjustment among undergraduate students, the acceptance of HR analytics by professionals, career self-management, and the ability to adapt to growing demands through career crafting. In addition, CCT has greatly influenced the development of computer-assisted career guidance systems (CACGS) by offering valuable insights and practical applications for career exploration and self-identity formation (Leung, 2022). The concept emphasizes the importance of proactive career orientation, career adaptability, mentoring, and technological readiness in shaping individuals' career paths and enhancing their subjective career accomplishments. The CCT provides a thorough framework for understanding and navigating the complexities of modern professional development.

The concept of "Organizational career growth" has been studied using the Cognitive Career Theory (CCT). Weng (2018) defined it as the measure of employees' career growth within their current organization rather than evaluating their overall career outcomes. The study proposed that career growth can be measured through four main components: Career Goal Progress (CG), Professional Ability Development (PA), Promotion Speed (PS), and Remuneration Growth (RG). The author discussed how the current organization creates an environment that supports employees in reaching their career objectives. PA outlines the process of acquiring new knowledge, skills, and abilities. The study by Dhankhar and Singh (2023) examines how organizations reinforce employee achievements through promotions and also explores the trend of increasing compensation.

Another aspect of career growth direction is mentoring. Research has shown that mentoring can moderate the relationship between proactive career orientation and career adaptability. Specifically, the positive relationship is stronger for individuals who receive more mentoring compared to those who receive less mentoring (Chang et al., 2023). Given the aforementioned factors, the present study utilized the five dimensions and put forth a conceptual framework (Figure 1). The five criteria have been empirically tested and shown to have an impact on organizational career growth (Dhankhar & Singh, 2023; Weng, 2018). However, previous studies did not determine the key criteria that shape strategically
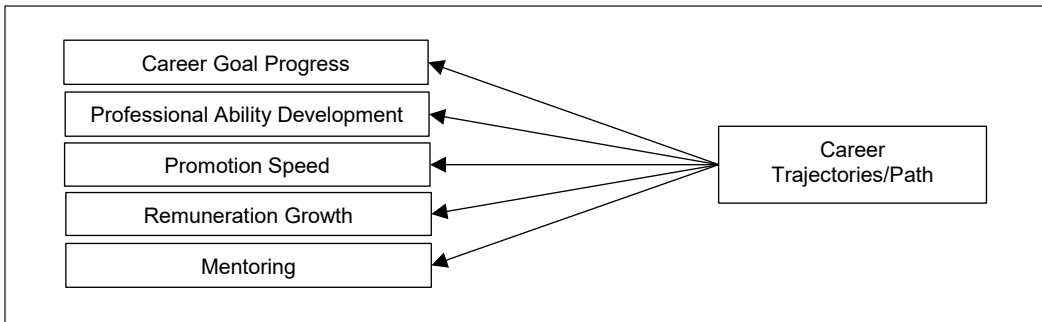
Figure 1. The proposed conceptual framework

empowered employee career trajectories. This study aimed to measure the cause-effect relationship.

Career Goal Progress

This study defines "Career Goal Progress" as the quantifiable progress made toward achieving one's career objectives, based on the works of Weng (2018) and Dhankhar and Singh (2023). It involves making tangible advancements, attaining noteworthy objectives, and overcoming obstacles in the pursuit of professional aspirations. Evaluating the progress of career objectives can be achieved through a range of approaches that take into account an individual's specific goals, circumstances, and personal inclinations. By combining various assessment methods, individuals can gain a comprehensive understanding of their progress toward their career goals, identify areas that need improvement, and make informed adjustments to their career plans and strategies. Previous research studies have not yet examined the measurement of this phenomenon using decision-making criteria.

Professional Ability Development

This research defines Professional Ability Development as the systematic improvement of an individual's abilities, knowledge, and competencies to achieve excellence in their chosen profession or professional field. It is based on the works of Weng (2018) and Dhankhar and Singh (2023). This encompasses specialized knowledge and skills related to specific job responsibilities, as well as interpersonal abilities like communication, leadership, and problem-solving. Organizations can enhance their effectiveness by actively investing in professional development and prioritizing improving employees' skills and competencies.

Promotion Speed

The concept of speed is derived from the works of Weng (2018) and Dhankhar and Singh (2023). It is defined in practical terms as the rate at which an individual progresses through the various levels of an organization's hierarchy, typically in relation to job titles, responsibilities, and compensation. It signifies the rate at

which someone advances in their career within a particular company or industry. Various factors, including human elements, organizational dynamics, and external variables, influence the promotion rate. While the allure of quick advancement in one's career may be tempting, it is imperative for individuals to prioritize continuous learning, improving performance, and building a strong foundation of skills and experience to guarantee long-term success in their professional pursuits.

Remuneration Growth

The concept of Remuneration Growth is derived from the works of Weng (2018) and Dhankhar and Singh (2023). It is defined as the gradual increase in an individual's remuneration, wages, or earnings over a specific timeframe. This encompasses various forms of financial compensation employees receive for their work, such as wage increases, bonuses, incentives, and other monetary rewards. A blend of individual factors, corporate policies, market dynamics, and economic conditions influences the rise in remuneration. Employees can enhance their chances of receiving more pay and advancing in their careers by prioritizing performance, honing their skills, and mastering bargaining techniques.

Mentoring

Mentoring is derived from the work of Dhankhar and Singh (2023) and is defined as a formal relationship in which a knowledgeable individual (the mentor) provides guidance, support, and advice to a less experienced person (the mentee) to help them develop their skills, knowledge, and professional path. Mentoring has yielded significant developmental advantages directly connected to the mentee's professional endeavors and long-term career prospects (Zong & Tsaur, 2023).

A mentor with extensive experience can provide valuable information and guidance to their mentees, reducing the trial-and-error process. This can be achieved through training and regular communication (Ivey & Dupré, 2022). In addition, employees who have a proactive approach to their careers actively pursue different opportunities to enhance their skills. A mentor can play a crucial role in providing them with coaching, assigning challenging tasks, offering feedback, and giving suggestions for their professional development (J. H. Park et al., 2016; M. L. Park & Lee, 2018). Research has shown that employees who have been mentored are more inclined to cultivate a distinct career identity and engage in self-regulatory behaviors (Kao et al., 2022). When employees face challenges at work, their mentor offers psychological support, including acceptance, friendship, and counseling (Lin et al., 2024). The mentor aims to help mentees overcome obstacles and return to work with a renewed and positive mindset. Research has shown that employees who receive effective mentoring experience improved psychological and emotional well-being, enabling them to effectively navigate career challenges and enhance their career adaptability (Nuis et al., 2023).

METHOD

This study utilizes the Multi-Criteria Decision-Making (MCDM) technique, specifically a DEMATEL technique (Ferdous et al., 2024). The DEMATEL technique is a systematic approach to evaluating and prioritizing alternatives or courses of action when multiple, often conflicting, criteria require simultaneous consideration (Priyanka et al., 2023).

This study employs a method based on the expertise of individuals who possess in-depth knowledge about the factors that shape the career trajectories of academic employees in strategically empowered Saudi Arabia. These individuals have the potential to provide substantial insights into the skills, abilities, and characteristics that are necessary for success. Expert evaluation is required for DEMATEL, using a comprehensive understanding of the ever-shifting dynamics of the industry as a foundation. Individuals who are professionals and have a profound awareness of a variety of cultures and expertise in the key factors that shape Saudi Arabia's academic employee career trajectories play a crucial role in strategically empowering Saudi Arabia.

DEMATEL Strategy and Analytical Flow

The DEMATEL approach is a complex analytical tool used in decision-making to understand the intricate correlations between different components. Understanding the connections between different criteria or elements is valuable for decision-makers as

it allows them to identify important factors and relationships within a system (Du & Shen, 2023). DEMATEL is particularly useful when multiple criteria or variables interact, posing challenges in determining each factor's relative importance or impact.

The objective of the activity was for specialists to assess the criteria by carefully examining each criterion's various components. The design of these components aims to enhance the expatriates' autonomy and give them greater agency in shaping their personal experience.

Experts assign a numerical value to x_{ij} to denote the importance of each criterion's influence. The values are determined using criteria denoted by i and j, which consider cause and effect. For each value of n, an expert's response is obtained. Equation 1 forms a non-negative $n \times n$ direct relation matrix:

$$x^y = \left[x_{ij}^y\right]_{n \times n} \qquad [1]$$

y represents the number of representations for each expert, ranging from 1 to q. The equation produces a matrix q for $x^1, x^2, \dots x^q$, where q represents the total number of experts. Equation 2 displays the average aggregated decision matrix for all the experts $Z =, \left[z_{ij}\right]$.

$$Z_{ij} = \frac{1}{q} \sum_{i=1}^{q} x_{ij}^y \qquad [2]$$

The second step in the process is the production of the normalized direct relation matrix. Using equation 3, one may build matrix D, which represents the direct

relations. This matrix is generated by using equation 3:

$$D = max\left(\max_{1 \leq i \leq n} \sum_{j=1}^{n} z_{ij}, \max_{1 \leq j \leq n} \sum_{i=1}^{n} z_{ij},\right)$$
[3]

In light of this, each cell contained within matrix Z will have a value that falls somewhere between the range of 0 and 1 in terms of numerical values.

Exponentiating the normalized initial direct-relation matrix D to the power of m, where m represents the indirect impact D^m; this is the third step in generating the total relation matrix. In the matrix that was produced, which is designated by the letter T, the cumulative influence generated by the participant's response is displayed. When the direct-relation matrices $D+D^2+...+D^m$ are added together, the total relation matrix T can be formed. As the value of D^m approaches zero, we are able to conclude that T is the same as the direct-relation matrix D that was first used. Therefore, the total relation matrix T may be represented as:

$T = D + D^2 + ... + D^\infty$. This expression can be further simplified as $T = D+D^2+...+D^\infty$ is $T = \lim_{m \to \infty}(D + D^2 ... + D^m) = D(I - D)$. As a result, equation 4 is derived

$$T = D(I - D)^{-1}$$
[4]

where I is an identity matrix of dimensions $n \times n$.

The process of constructing the rows and columns of the matrix begins with the fourth phase and continues through the fifth stage. The vectors utilized to show the rows and columns components of the exhaustive relation matrix are referred to as relations. In the event that the vectors r and c, respectively, are utilized to represent the sum of the rows of matrix T and the sum of the columns of matrix T, then equation 5 is utilized to build the row and column vectors:

$$r = [r_i]_{n \times 1} = \left[\sum_{j=1}^{n} t_{ij}\right]_{n \times 1} \text{ and}$$

$$c = [c_j]_{1 \times n} = \left[\sum_{j=1}^{n} t_{ij}\right]_{1 \times n}$$
[5]

If j is equal to i, then the influence that criterion i has on j will be represented by the difference between the total of r_i and c_j. In the event that j is not equal to i, the sum will reveal the overall effects that criterion i has experienced, while the difference will demonstrate the overall influence that criterion i has contributed to the system for the system as a whole. On the other hand, if the value is positive, then the criteria i serves as a primary cause, and if the value is negative, then it serves as a primary effect. Classifying the criteria as belonging to the cause group is possible if the difference between r_i and c_j is positive. This indicates that the criteria have a considerable influence on the other criteria. On the other hand, if the difference between r_i and c_j is determined to be negative, this suggests that the other criteria influencing the criteria in the issue collectively and ought to be categorized as the "effect." For this reason, the sum of r and c is referred to as the "Prominence," while the difference between r and c is referred to as the "Relation."

During the fifth step, the process involves determining a threshold value

(α) to generate an interaction diagram. It is possible to determine the threshold value for the impact connection by using Equation 6:

$$\alpha = \sum_{i=1}^{n} \sum_{j=1}^{n} t_{ij} / N \qquad [6]$$

In this context, the symbol α represents the quotient of the sum of the t_{ij} values and the number N. The variable N represents the total number of matrix elements obtained by calculating the average of the elements in matrix T. This will yield the total count of matrix elements. This computation identifies and eliminates any impacts deemed moderate. This is conducted to ensure quality control. Given that no impacts will be less severe than the threshold value, it can be concluded that the impact connections will not encompass any consequences below this threshold.

In the sixth phase, you are required to construct a relational diagram illustrating the causal relationships among the components and their respective effects. The correlation between cause and effect has been assigned to each coordinate set within the complete array of rows and columns to generate the relationship diagram. This was conducted to ensure the accuracy of the diagram. This was conducted to ensure that no elements were overlooked in the process. This image consists of rows and columns that depict the interactions among the individual criteria. The information presented in these rows and columns allows for identifying the relative relevance of each criterion and their interactions.

RESULT

The main elements that determine the effectiveness of key determinants that influence the career trajectories of academic staff in Saudi Arabia were identified via the use of a strategic framework to conduct a study. DEMATEL was utilized to accomplish this goal. The first step in the research was the collecting of data. After the questions/items were developed, two prominent professors were responsible for developing and validating the five key criteria, which comprised five items or questions with respect to the criteria. It is crucial to have the involvement of two professors in developing and validating the key criteria and items. The involvement of two professors in the validation process enhances the quality assurance. With their extensive experience and expertise, they are able to assess the criteria and items carefully to ensure they precisely capture the constructs being measured. Feedback and suggestions from others have the potential to enhance the clarity, coherence, and validity of the measurement instrument.

A purposive sample of 30 faculty members from Saudi universities was selected. Every one of these members had a career in academia that spanned more than ten years of experience, necessary to ensure the study's rigor and reliability. Six of the total number of experts were international staff, while the remaining twenty-four were Saudi natives. This sample is considered sizable and diverse enough for the study (Priyanka et al., 2023). These individuals have a deep understanding and expertise

in academia, which makes them highly qualified to offer insights into the factors that impact career paths. The perspectives encompass diverse experiences within the academic community, thereby bolstering the credibility and applicability of the findings.

The items were linked with a Likert scale that ranged from 0 (which meant "no influence") to 4 (which meant "high influence") for each question. Every single one of the 30 staff members responded, which were subsequently integrated into $n \times n$ non-negative direct relation matrix based on equation 1 within a spreadsheet created in Microsoft Excel (Matrix 1).

In order to calculate the average of the $n \times n$ non-negative direct relation matrix, which is also known as the mean total of decision matrices (Z), Equation 2 is utilized. The matrices that are provided (Matrix 2) as follows are obtained from Equation 2:

$$Z = \begin{bmatrix} 0 & 3.3 & 2.6 & 1.9 & 2.1 \\ 1.9 & 0 & 2.6 & 3.9 & 2.6 \\ 4 & 2.6 & 0 & 2 & 2.3 \\ 2.1 & 3.9 & 2 & 0 & 2.4 \\ 2.6 & 2.3 & 2.6 & 2.4 & 0 \end{bmatrix}$$

Matrix 2. Average Non-Negative Direct Relation Matrix

X^1
$$\begin{bmatrix} 0 & 3 & 4 & 1 & 2 \\ 2 & 0 & 3 & 4 & 1 \\ 4 & 1 & 0 & 2 & 3 \\ 3 & 4 & 2 & 0 & 1 \\ 1 & 2 & 3 & 4 & 0 \end{bmatrix}$$

X^2
$$\begin{bmatrix} 0 & 3 & 4 & 2 & 1 \\ 1 & 0 & 2 & 3 & 4 \\ 4 & 2 & 0 & 1 & 3 \\ 3 & 4 & 1 & 0 & 2 \\ 2 & 1 & 3 & 4 & 0 \end{bmatrix}$$

X^3
$$\begin{bmatrix} 0 & 4 & 3 & 1 & 2 \\ 2 & 0 & 4 & 3 & 1 \\ 4 & 3 & 0 & 2 & 1 \\ 3 & 1 & 2 & 0 & 4 \\ 1 & 2 & 1 & 4 & 0 \end{bmatrix}$$

X^4
$$\begin{bmatrix} 0 & 2 & 4 & 1 & 3 \\ 3 & 0 & 1 & 2 & 4 \\ 4 & 3 & 0 & 2 & 1 \\ 2 & 4 & 1 & 0 & 3 \\ 1 & 3 & 2 & 4 & 0 \end{bmatrix}$$

X^5
$$\begin{bmatrix} 0 & 3 & 1 & 2 & 4 \\ 1 & 0 & 2 & 4 & 3 \\ 4 & 1 & 0 & 3 & 2 \\ 3 & 4 & 2 & 0 & 1 \\ 2 & 1 & 4 & 3 & 0 \end{bmatrix}$$

X^6
$$\begin{bmatrix} 0 & 2 & 4 & 3 & 1 \\ 3 & 0 & 2 & 4 & 1 \\ 1 & 4 & 0 & 2 & 3 \\ 4 & 3 & 1 & 0 & 2 \\ 2 & 1 & 3 & 4 & 0 \end{bmatrix}$$

X^7
$$\begin{bmatrix} 0 & 3 & 4 & 1 & 2 \\ 2 & 0 & 4 & 3 & 1 \\ 4 & 1 & 0 & 2 & 3 \\ 3 & 4 & 2 & 0 & 1 \\ 1 & 2 & 3 & 4 & 0 \end{bmatrix}$$

X^8
$$\begin{bmatrix} 0 & 2 & 3 & 4 & 1 \\ 3 & 0 & 2 & 1 & 4 \\ 4 & 1 & 0 & 2 & 3 \\ 2 & 4 & 1 & 0 & 3 \\ 1 & 3 & 4 & 3 & 0 \end{bmatrix}$$

X^9
$$\begin{bmatrix} 0 & 4 & 3 & 2 & 1 \\ 1 & 0 & 2 & 3 & 4 \\ 4 & 3 & 0 & 1 & 2 \\ 3 & 1 & 2 & 0 & 4 \\ 2 & 4 & 1 & 4 & 0 \end{bmatrix}$$

X^{10}
$$\begin{bmatrix} 0 & 4 & 3 & 1 & 2 \\ 2 & 0 & 4 & 3 & 1 \\ 4 & 3 & 0 & 1 & 2 \\ 1 & 2 & 1 & 0 & 4 \\ 3 & 1 & 2 & 4 & 0 \end{bmatrix}$$

X^{11}
$$\begin{bmatrix} 0 & 3 & 1 & 4 & 2 \\ 1 & 0 & 2 & 4 & 3 \\ 4 & 1 & 0 & 3 & 2 \\ 3 & 4 & 2 & 0 & 1 \\ 2 & 3 & 1 & 2 & 0 \end{bmatrix}$$

X^{12}
$$\begin{bmatrix} 0 & 4 & 3 & 2 & 1 \\ 1 & 0 & 2 & 4 & 3 \\ 4 & 3 & 0 & 1 & 2 \\ 3 & 1 & 2 & 0 & 4 \\ 2 & 3 & 4 & 1 & 0 \end{bmatrix}$$

X^{13}
$$\begin{bmatrix} 0 & 3 & 4 & 1 & 2 \\ 2 & 0 & 3 & 4 & 1 \\ 4 & 1 & 0 & 2 & 3 \\ 3 & 4 & 2 & 0 & 1 \\ 1 & 2 & 3 & 4 & 0 \end{bmatrix}$$

X^{14}
$$\begin{bmatrix} 0 & 4 & 3 & 1 & 2 \\ 2 & 0 & 4 & 3 & 1 \\ 4 & 3 & 0 & 1 & 2 \\ 3 & 1 & 2 & 0 & 4 \\ 1 & 2 & 1 & 4 & 0 \end{bmatrix}$$

X^{15}
$$\begin{bmatrix} 0 & 4 & 2 & 1 & 3 \\ 3 & 0 & 1 & 4 & 2 \\ 4 & 3 & 0 & 2 & 1 \\ 2 & 1 & 4 & 0 & 3 \\ 1 & 2 & 3 & 4 & 0 \end{bmatrix}$$

X^{16}
$$\begin{bmatrix} 0 & 4 & 3 & 1 & 2 \\ 2 & 0 & 4 & 3 & 1 \\ 4 & 3 & 0 & 1 & 2 \\ 3 & 1 & 2 & 0 & 4 \\ 1 & 2 & 1 & 4 & 0 \end{bmatrix}$$

X^{17}
$$\begin{bmatrix} 0 & 4 & 2 & 1 & 3 \\ 3 & 0 & 1 & 4 & 2 \\ 4 & 3 & 0 & 2 & 1 \\ 2 & 1 & 4 & 0 & 3 \\ 1 & 2 & 3 & 4 & 0 \end{bmatrix}$$

X^{18}
$$\begin{bmatrix} 0 & 2 & 3 & 4 & 1 \\ 3 & 0 & 2 & 1 & 4 \\ 4 & 1 & 0 & 2 & 3 \\ 2 & 4 & 1 & 0 & 3 \\ 1 & 3 & 4 & 3 & 0 \end{bmatrix}$$

X^{19}
$$\begin{bmatrix} 0 & 3 & 2 & 1 & 4 \\ 1 & 0 & 2 & 4 & 3 \\ 4 & 1 & 0 & 3 & 2 \\ 3 & 4 & 1 & 0 & 2 \\ 2 & 3 & 4 & 2 & 0 \end{bmatrix}$$

X^{20}
$$\begin{bmatrix} 0 & 2 & 3 & 1 & 4 \\ 1 & 0 & 2 & 4 & 3 \\ 4 & 1 & 0 & 3 & 2 \\ 3 & 4 & 1 & 0 & 2 \\ 2 & 3 & 4 & 2 & 0 \end{bmatrix}$$

X^{21}
$$\begin{bmatrix} 0 & 3 & 1 & 4 & 2 \\ 1 & 0 & 2 & 4 & 3 \\ 4 & 1 & 0 & 3 & 2 \\ 3 & 4 & 2 & 0 & 1 \\ 2 & 3 & 1 & 2 & 0 \end{bmatrix}$$

X^{22}
$$\begin{bmatrix} 0 & 3 & 1 & 4 & 2 \\ 1 & 0 & 2 & 4 & 3 \\ 4 & 1 & 0 & 3 & 2 \\ 3 & 4 & 2 & 0 & 1 \\ 2 & 3 & 1 & 2 & 0 \end{bmatrix}$$

X^{23}
$$\begin{bmatrix} 0 & 4 & 3 & 1 & 2 \\ 1 & 0 & 2 & 4 & 3 \\ 4 & 3 & 0 & 1 & 2 \\ 3 & 1 & 2 & 0 & 4 \\ 2 & 3 & 4 & 2 & 0 \end{bmatrix}$$

X^{24}
$$\begin{bmatrix} 0 & 3 & 2 & 1 & 4 \\ 1 & 0 & 2 & 4 & 3 \\ 4 & 1 & 0 & 3 & 2 \\ 3 & 4 & 1 & 0 & 2 \\ 2 & 3 & 4 & 2 & 0 \end{bmatrix}$$

X^{25}
$$\begin{bmatrix} 0 & 4 & 3 & 1 & 2 \\ 1 & 0 & 2 & 4 & 3 \\ 4 & 3 & 0 & 1 & 2 \\ 3 & 1 & 2 & 0 & 4 \\ 2 & 3 & 4 & 2 & 0 \end{bmatrix}$$

X^{26}
$$\begin{bmatrix} 0 & 4 & 3 & 1 & 2 \\ 1 & 0 & 2 & 4 & 3 \\ 4 & 3 & 0 & 1 & 2 \\ 3 & 1 & 2 & 0 & 4 \\ 2 & 3 & 4 & 2 & 0 \end{bmatrix}$$

X^{27}
$$\begin{bmatrix} 0 & 2 & 3 & 4 & 1 \\ 3 & 0 & 2 & 1 & 4 \\ 4 & 1 & 0 & 2 & 3 \\ 2 & 4 & 1 & 0 & 3 \\ 1 & 3 & 4 & 3 & 0 \end{bmatrix}$$

X^{28}
$$\begin{bmatrix} 0 & 2 & 3 & 1 & 4 \\ 1 & 0 & 2 & 4 & 3 \\ 4 & 1 & 0 & 3 & 2 \\ 3 & 4 & 1 & 0 & 2 \\ 2 & 3 & 4 & 2 & 0 \end{bmatrix}$$

X^{29}
$$\begin{bmatrix} 0 & 4 & 3 & 1 & 2 \\ 1 & 0 & 2 & 4 & 3 \\ 4 & 3 & 0 & 1 & 2 \\ 3 & 1 & 2 & 0 & 4 \\ 2 & 3 & 4 & 2 & 0 \end{bmatrix}$$

X^{30}
$$\begin{bmatrix} 0 & 3 & 1 & 4 & 2 \\ 1 & 0 & 2 & 4 & 3 \\ 4 & 1 & 0 & 3 & 2 \\ 3 & 4 & 2 & 0 & 1 \\ 2 & 3 & 1 & 2 & 0 \end{bmatrix}$$

Matrix 1. A. Non-Negative Direct Relation Matrix

The total decision normalized direct influence matrix. Calculating the total decision normalized direct effect matrix provides a foundational framework for simplifying data to comprehend the complex relationships and dynamics inherent in a decision-making environment. Consequently, this enhances decision-making and problem-solving capabilities, which is advantageous.

To identify the cell in a matrix with the highest value, one must first discover the total number of rows and columns. The resultant normalized matrix D, displayed in Matrix 3, is derived by dividing all matrix values by the maximum value. This is executed to obtain the following outcomes:

An identity matrix, denoted by the letter i, is necessary to produce the complete relation matrix. A fundamental reference for constructing the total relation matrix is the identity matrix, which is used in formulating the total relation matrix. Within the scope of DEMATEL, the identity matrix is commonly represented by a square matrix. This has been the case for quite some time.

The diagonal members of this matrix are all equal to one, whereas the other elements are all equal to zero within this matrix. The fact that this matrix is empty provides evidence of no connections or impacts between the elements. By using this identity matrix (Matrix 4), one may more easily determine the direct connections that exist between components as well as the indirect interactions that exist between pieces.

In a similar manner, once the identity matrix has been established, the subsequent step is to construct a matrix by computing the difference between the identity matrix and the direct relationships matrix i-D. Through the use of the new matrix, direct and indirect relationships will be established. When compared to indirect interactions, direct relationships reflect the immediate impact that one element has on another. In contrast, indirect interactions indicate the impact that one component has on another factor through intermediate factors. Perform matrix subtraction between the identity matrix and the total relation matrix to individually isolate and analyze the direct

$$
D = \begin{bmatrix}
0 & 0.272727273 & 0.214876033 & 0.157024793 & 0.173533719 \\
0.157024793 & 0 & 0.214876033 & 0.32231405 & 0.214876033 \\
0.330578512 & 0.214876033 & 0 & 0.165289256 & 0.190082645 \\
0.173553719 & 0.32231405 & 0.165289256 & 0 & 0.198347107 \\
0.214876033 & 0.190082645 & 0.214876033 & 0.198347107 & 0
\end{bmatrix}
$$

Matrix 3. Normalized Relation Matrix

$$
i = \begin{bmatrix}
1 & 0 & 0 & 0 & 0 \\
0 & 1 & 0 & 0 & 0 \\
0 & 0 & 1 & 0 & 0 \\
0 & 0 & 0 & 1 & 0 \\
0 & 0 & 0 & 0 & 1
\end{bmatrix}
$$

Matrix 4. Identity Matrix

relationships between factors. This can be done by subtracting the identity matrix from the total relation matrix using $T = D(I - D)^{-1}$ as shown in Matrix 5.

Taking the inverse of the matrix above $(I - D)^{-1}$ squared is the next step in the process. Taking the inverse of the matrix is one method for normalizing the matrix. This method ensures that the influence values are contained within a predetermined range, which makes it simpler to comprehend and measure the differences between the variables. Inverse operations are used to convert the values in the matrix into influence scores, which precisely describe the amount of the effect between factors as well as the direction in which the effect should be directed (Matrix 6).

Following the discovery of the inverse matrix, the subsequent step is to determine the total relation matrix T by employing Equation 4. This matrix is an indispensable tool for examining the interrelationships between the many different aspects or criteria that make up a complex system. $T = D(I - D)^{-1}$ is a complete relation matrix that offers a comprehensive examination of the relationships between the variables. This analysis provides significant insights into the dynamics of the system that is being investigated (See Matrix 7).

The criteria relevant to the career path can be determined from the total relation matrix T using Equation 5. The r and c values denote the magnitude and orientation of the associations among the criteria. Analyzing the distinctions between rows and columns reveals significant insights into the causal relationships among key factors and the career trajectories of

$$i - D = \begin{bmatrix} 1 & -0.272727273 & -0.214876033 & -0.157024793 & -0.173553719 \\ -0.157024793 & 1 & -0.214876033 & -0.32231405 & -0.214876033 \\ -0.330578512 & -0.214876033 & 1 & -0.165289256 & -0.190082645 \\ -0.173553719 & -0.32231405 & -0.165289256 & 1 & -0.198347107 \\ -0.214876033 & -0.190082645 & -0.214876033 & -0.198347107 & 1 \end{bmatrix}$$

Matrix 5. Identity Matrix Extraction from Total Relation Matrix

$$(i - D)^{-1} = \begin{bmatrix} 2.071296896 & 1.425612233 & 1.194119623 & 1.206670095 & 1.12213212 \\ 1.301160331 & 2.322338885 & 1.280216832 & 1.412030821 & 1.248255411 \\ 1.408972402 & 1.479656556 & 2.094354712 & 1.285430276 & 1.215536991 \\ 1.258655014 & 1.511353398 & 1.201750962 & 2.11985603 & 1.192097194 \\ 1.244805039 & 1.365481524 & 1.188325148 & 1.224362506 & 1.978178545 \end{bmatrix}$$

Matrix 6. Inversed Identity Matrix Extraction from Total Relation Matrix

$$T = \begin{bmatrix} 1.071296896 & 1.425612233 & 1.194119623 & 1.206670095 & 1.123213212 \\ 1.301160331 & 1.322338885 & 1.280216832 & 1.412030821 & 1.248255411 \\ 1.408972402 & 1.479656556 & 1.094354712 & 1.285430276 & 1.215536991 \\ 1.258655014 & 1.511353398 & 1.201750962 & 1.11985603 & 1.192097194 \\ 1.244805039 & 1.365481524 & 1.188325148 & 1.224362506 & 0.978178545 \end{bmatrix}$$

Matrix 7. Final Total Relation Matrix

academic staff in Saudi Arabia. Negative differences highlight criteria primarily affected by other academic factors, while positive differences indicate criteria that more significantly influence career trajectories. Understanding these processes can yield important information for the implementation of strategic interventions and policies designed to promote career advancement and empowerment in the academic sector of Saudi Arabia.

Table 1 illustrates that there is a negative difference between the two criteria ("Career Goal Progress" and "Professional Ability Development"). In light of this, it can be deduced that these criteria have a more significant influence on an outcome than on a significant element. This particular framework suggests that the professional pathways of academic staff in Saudi Arabia are greatly impacted by their progress toward goals and their growth of professional abilities. The other components that make up the five criteria can have these criteria serve as outputs or consequences of their actions. This means that improvements in these areas are likely to occur as a result of changes in the aspects of the academic environment or organizational practices related to

"Promotion Speed," "Remuneration Growth," and "Mentoring."

On the other hand, the presence of a positive difference indicates that the criterion has a bigger influence as a cause than it does as an effect. Criteria such as "Promotion Speed," "Remuneration Growth," and "Mentoring" can have a considerable impact on the career paths of academic employees in Saudi Arabia. These criteria directly influence their prospects for promotion and professional growth. The identification of positive differences reveals the criteria that influence changes in many elements of academic career paths, indicating specific areas where interventions or initiatives should be focused to improve career advancement and job fulfillment among academic personnel.

The concluding phase of DEMATEL involves the development of an interaction diagram. The research must establish a threshold value (α) using Equation 6. It is essential to identify major linkages among components within the system. The threshold value distinguishes between strong and weak interactions, enhancing the clarity of the interaction diagram. The threshold value (α) differentiates between significant and insignificant links. The

Table 1

The complete relation status among the criteria

Criteria	r_i	$c_j.$	$r_i + c_j.$	$r_i - c_j.$	Identity
CG	6.029830967	6.284889682	12.31472	-0.25506	Effect
PA	6.56400228	7.104442596	13.66844	-0.54044	Effect
PS	6.483950937	5.958767277	12.44272	0.525184	Cause
RG	6.283712597	6.248349727	12.53206	0.035363	Cause
MM	6.001152763	5.766200262	11.76735	0.234953	Cause

threshold value derived from Equation 6 is "1.268074839" (Table 2). The highlighted values exceed the threshold. Criteria with connection strengths exceeding the threshold value exhibit significant interactions, while those with connection strengths below the threshold are regarded as having minimal interactions.

The interaction diagram in Figure 2 clearly illustrates with an arrow that "Professional ability development" has a significant influence on career goal achievement, promotion speed, and compensation growth but not on mentorship. That is why there is no link between them. Improving professional skills and capacities is vital for strengthening different areas of academic employee career trajectories

in Saudi Arabia. This shows that the development of professional talents has a significant influence.

Just like the growth of "Professional ability development," "Promotion speed," or the pace of promotion has a major impact on every other criterion except for mentorship. Consequently, a connection exists between them through arrow linkages (Figure 2). Therefore, the rate at which one gets promoted greatly influences the advancement of career goals, the development of professional abilities, and the salary increase. This suggests that the rate at which academic careers progress in Saudi Arabia affects several aspects of academic employees' career paths significantly.

Table 2
The criteria values for the interaction diagram

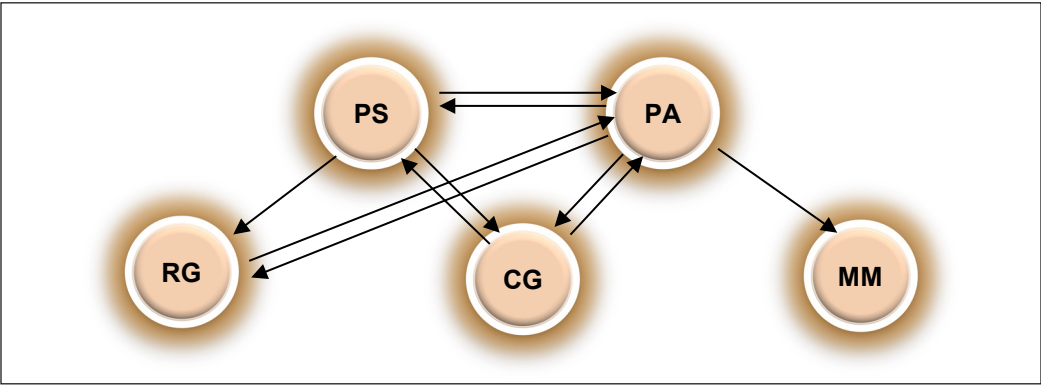| Criteria	CG	PA	PS	RG	MM
CG	1.071296896	**1.425612233**	**1.194119623**	1.206670095	1.13213212
PA	**1.301160331**	1.322338885	**1.280216832**	**1.412030821**	1.248255411
PS	**1.408972402**	**1.479656556**	1.094354712	**1.285430276**	1.215536991
RG	1.258655014	**1.511353398**	1.201750962	1.11985603	1.192097194
MM	1.244805039	**1.365481524**	1.188325148	1.224362506	0.978178545

Figure 2. The impactful and non-impactful links

Remuneration growth has a major impact on the development of professional skills. Therefore, it is the sole factor that directly contributes to this development. This implies that enhancements in wage and compensation packages have a key role in fostering the professional growth and progression of academic professionals in Saudi Arabia. Nevertheless, the salary increase does not substantially impact the progress of career goals, mentorship, or the pace of promotion.

Mentoring plays a crucial role in developing professional abilities, which is why it only results in a single connection. This suggests that mentoring programs have a substantial impact on nurturing the professional advancement and progress of academic professionals in Saudi Arabia. Nevertheless, mentoring has no substantial impact on advancing career goals, the pace of promotion, or the salary rise.

DISCUSSION

This study focuses on decision-making and aims to uncover the major elements that influence the career paths of academic employees in Saudi Arabia, taking into account their strategic empowerment. According to Weng (2018), the measurement of career growth within organizations can be categorized into four primary components: Career Goal Progress (CG), Professional Ability Development (PA), Promotion Speed (PS), and Remuneration Growth (RG). However, the present study has delineated an additional dimension of career growth direction as "mentoring." This is supported by research indicating that mentoring can moderate the association between proactive career orientation and career adaptability. Specifically, the positive relationship is more pronounced for individuals who receive a greater amount of mentoring in comparison to those who receive less mentoring (Chang et al., 2023).

Ensuring the inclusion of these crucial variables provided an opportunity to ascertain the causal relationship and its impact on decision-making processes, leading to a significant outcome. In a similar vein, the analysis of the impact of CCT in this study focuses on the necessity of perceiving career development as a gradual process of developing an individual's occupational trajectory. At the core of this endeavor lies the utilization of personal experiences, interests, and values throughout one's professional trajectory and its consequential effects. The importance of constructing meaning and establishing identity in making professional decisions is highlighted as an integral component of the concept of professional Choice Theory (CCT; Yates, 2020).

The central and principal finding of the study has revealed that "Professional ability development," "Promotion speed," or the timing of promotion has a major impact on every other criterion, except for mentorship. This finding is supported by the study that revealed that the current organization creates an environment that supports employees in reaching their career objectives by acquiring new knowledge, skills, and abilities, reinforcing employee achievements

through promotions, and also exploring the trend of increasing compensation as well as mentoring (Dhankhar & Singh, 2023). That means the two criteria are within the factors empowering Saudi Arabia's academic employees' career trajectories. Academic decision-makers in human resource management (HRM) have the capacity to comprehend the strategies that can influence the career trajectories of their employees, specifically in relation to professional skill enhancement, promotion speed, and the timing of promotions. That is in the realm of HRM; decision-makers at universities can now understand the schemes that would have an effect on the career paths of their employees. These schemes include promotion speed or the timing of promotions, as well as professional ability development.

The CCT also supports the outcome of this research for career exploration and building one's identity (Leung, 2022). When an individual's capabilities, skills, and competencies are systematically improved to reach excellence (Dhankhar & Singh, 2023; Weng, 2018), this is where excellence is achieved. For this reason, the finding is connected to the existing CCT, to which the study contributes. It was established that a study conducted by Alshammari (2023), shows the impact of career development at the University of Hail, Saudi Arabia, for which job requirements on professionals are the key aspect that has the potential for career path improvement; it was established that during this study, the findings of this study were compared with the findings of

previous studies to highlight the significance of the results in advancing the theoretical understanding. This study does not directly connect to that; nonetheless, it highlights that the strategies of human resource management (HRM) on professional growth, regardless of the source, are the most important factor in career advancement.

This current study is compared with the work of Alharthey et al. (2022), which highlights work engagement, coworker connections, and a supportive work environment as the characteristics that influence employee satisfaction and retention in the educational sector in Saudi Arabia. It was discovered in this study that to preserve the knowledge of the career path, it is possible that HRM should determine the pace of professional skill development and promotion. This finding is an extension of the previous study. In the sense that the previous study included the components of employee satisfaction and retention, the current study has identified that retention is a career path and that promotion speed, once advancing professionally, is a clear career path or trajectory that Saudi Arabia's universities' HRM should understand.

The insights on how the universities in Saudi Arabia could apply the findings and to better create career progression for the academic employees lie with the fact that the academic employers at Saudi Arabia's universities should signify and understand that the rate at which an employee advances in their career is influenced by the strategies that the HRM department applies. It is necessary for individuals to prioritize

continual learning, improving performance, and creating a strong foundation of skills and experience to ensure long-term success in their professional pursuits. Although the temptation of quick development in one's career may be appealing, it is imperative that individuals prioritize these things.

CONCLUSION

This research was conducted to unveil the key factors shaping Saudi Arabia's strategically empowered academic employee career trajectories. This is motivated by the lack of studies that provide insight into the crucial aspects that influence the development of strategically empowered career paths among academic employees in Saudi Arabia. That is why the DEMATEL technique was utilized to identify and examine the connections between important factors, offering a vital understanding of the dynamics of career advancement in the academic environment of Saudi Arabia. The finding of the study demonstrates that elements such as the enhancement of "professional skills" and "the timing of promotion" are crucial in promoting strategic empowerment among academic staff. These characteristics enhance individual career progression and have wider ramifications for organizational prosperity and sectoral expansion. Furthermore, the impact of salary increases and guidance highlights the significance of encouraging organizational settings and efficient human resource strategies in promoting career advancement and contentment in the workplace. The research thoroughly analyses the connections between important factors and provides practical suggestions for improving strategic empowerment in the academic sector in Saudi Arabia. The recommendations include introducing focused professional development initiatives, encouraging clear and meritocratic promotion procedures, and providing sufficient support and guidance for academic faculty. This research adds to the existing body of knowledge on academic career development and strategic management by offering empirical insights into the factors that influence career paths in the specific context of Saudi Arabia.

ACKNOWLEDGEMENT

REFERENCES

Abdulrahman, A. T. (2024). A study of unemployment in Saudi Society using multivariate techniques. *Advances and Applications in Statistics, 91*(1), 47-58. https://doi.org/10.17654/0972361724004

Alharthey, A. M., Leong, Y. C., Said, M. F., & Chong, C. W. (2022). Gender's moderating role in employee satisfaction determinants and retention in Saudi Arabia's higher education sector. *Advances in Social Sciences Research Journal, 9*(8), 19-43. https://doi.org/10.14738/assrj.96.12406

Alshaikhmubarak, A., Da Camara, N., & Baruch, Y. (2020), The impact of high-performance human resource practices on the research performance and career success of academics in Saudi Arabia. *Career Development International, 25*(6), 671-690. https://doi.org/10.1108/CDI-09-2019-0209

Alshammari, S. A. (2023). Impact of communication competencies, job requirements and Academic performance on students' career development at the University of Hail, Saudi Arabia. *Amazonia Investiga, 12*(61), 173-183. https://doi.org/10.34069/AI/2023.61.01.18

Chang, P.-C., Guo, Y., Cai, Q., & Guo, H. (2023). Proactive career orientation and subjective career success: A perspective of career construction theory. *Behavioral Sciences 13*(6), Article 503. https://doi.org/10.3390/bs13060503

Dhankhar, K., & Singh, A. (2023). Employees' adoption of HR analytics–a theoretical framework based on career construction theory. *Evidence-based HRM, 11*(3), 395-411. https://doi.org/10.1108/ebhrm-02-2022-0053

Du, Y. W., & Shen, X. L. (2023). Group hierarchical DEMATEL method for reaching consensus. *Computers & Industrial Engineering, 175,* Article 108842. https://doi.org/10.1016/j.cie.2022.108842

El-Zoubi, J. R., & Wirba, A. V. (2017). Academic staff job satisfaction in Saudi Arabia: A case study of academic institutions in the Eastern Province of Saudi Arabia. *Research on Humanities and Social Sciences, 7*(2), 73-89.

Ferdous, J., Bensebaa, F., Milani, A. S., Hewage, K., Bhowmik, P., & Pelletier, N. (2024). Development of a generic decision tree for the integration of multi-criteria decision-making (MCDM) and multi-objective optimization (MOO) methods under uncertainty to facilitate sustainability assessment: A methodical review. *Sustainability, 16*(7), Article 2684. https://doi.org/10.3390/su16072684

Gorondutse, A. H., Abdullah, S. S., Ahmad, F. B., Al Sherry, W. B. R., & Rogo, H. B. (2018). Influence of leadership style, training, role of ambiguity on employee performance of higher education of Saudi Arabia (KSA). *Journal of Business and Retail Management Research, 13*(1), 213-224. https://doi.org/10.24052/JBRMR/V13IS01/ART-21

Habib, S., Khan, M. A., & Hamadneh, N. N. (2022). Gender sensitivity in accessing healthcare services: Evidence from Saudi Arabia. *Sustainability, 14*(22), Article 14690. https://doi.org/10.3390/su142214690

Ivey, G. W., & Dupré, K. E. (2022). Workplace mentorship: A critical review. *Journal of Career Development, 49*(3), 714-729. https://doi.org/10.1177/0894845320957737

Kao, K. Y., Hsu, H. H., Rogers, A., Lin, M. T., Lee, H. T., & Lian, R. (2022). I see my future!: Linking mentoring, future work selves, achievement orientation to job search behaviors. *Journal of Career Development, 49*(1), 232-245. https://doi.org/10.1177/0894845320926571

Leung, S. A. (2022). New frontiers in computer-assisted career guidance systems (CACGS): Implications from career construction theory. *Frontiers in Psychology, 13,* Article 786232. https://doi.org/10.3389/fpsyg.2022.786232

Lin, Y. K., Lin, C. D., & Lin, B. Y. J. (2024). Junior doctors' workplace well-being and the determinants based on ability–motivation–opportunity (AMO) theory: Educational and managerial implications from a three-year longitudinal observation after graduation. *Medical Teacher, 47*(1), 110-125. https://doi.org/10.1080/0142159X.2024.2322719.

Nalis, I., Kubicek, B., & Korunka, C. (2022). Resources to respond: A career construction theory perspective on demands, adaptability, and career crafting. *The Career Development Quarterly, 70*(2), 138-152. https://doi.org/10.1002/cdq.12293

Nuis, W., Segers, M., & Beausaert, S. (2023). Conceptualizing mentoring in higher education: A systematic literature review. *Educational Research Review, 41*, Article 100565. https://doi.org/10.1016/j.edurev.2023.100565

Park, J. H., Newman, A., Zhang, L., Wu, C., & Hooke, A. (2016). Mentoring functions and turnover intention: The mediating role of perceived organizational support. *The International Journal of Human Resource Management, 27*(11), 1173-1191. https://doi.org/10.1080/09585192.2015.1062038

Park, M. L., & Lee, M. J. (2018). Effects of mentoring program's development about new nurses. *Journal of Convergence for Information Technology, 8*(1), 43-51.

Priyanka, R., Ravindran, K., Sankaranarayanan, B., & Ali, S. M. (2023). A fuzzy DEMATEL decision modeling framework for identifying key human resources challenges in start-up companies: Implications for sustainable development. *Decision Analytics Journal, 6*, Article 100192. https://doi.org/10.1016/j.dajour.2023.100192

Ratyan, M. A. M., & Mohammad, A. A. M. (2016). Saudi higher education reality and prospects: Evaluating careers' dimensions of university teaching, scientific research and community service northern border university as a model. *Indian Journal of Science and Technology, 9*(4), 1-16. https://doi.org/10.17485/ijst/2016/v9i4/84984

Salam, A. A. (2022). Saudi Arabia's labor market transitions to thrive vision 2030: A demographic appraisal. In R. Baikady, S. Sajid, J. Przeperski, V. Nadesan, M. R. Islam, & J. Gao (Eds.), *The Palgrave Handbook of Global Social Problems* (pp. 1-22). Palgrave Macmillan.

Samarin, I. A., & Al-Asfour, A. A. (2023). National human resource development in transitioning societies: The case of Saudi Arabia. *New Horizons in Adult Education and Human Resource Development, 35*(1), 20-31. https://doi.org/10.1177/1939422523117157

Singh, A., Singh, H. P., Alam, F., & Agrawal, V. (2022). Role of education, training, and E-learning in sustainable employment generation and social empowerment in Saudi Arabia. *Sustainability, 14*(14), Article 8822. https://doi.org/10.3390/su14148822.

Sobaih, A. E. E. (2023). Challenges in effective implementation of saudization policy in the restaurant sector. *Sustainability, 15*(9), Article 7654. https://doi.org/10.3390/su15097654

Thompson, M. C., & Almoaibed, H. (2021). *Dirasat: Good jobs and bad jobs: Employment attitudes, perceptions, and priorities in Saudi Arabia.* King Faisal Center for Research and Islamic Studies.

Tlaiss, H. A., & Elamin, A. (2016). Human resource management in Saudi Arabia. In P. S. Budhwar & K. Mellahi (Eds.), *Handbook of human resource management in the Middle East* (pp. 141-158). Edward Elgar Publishing.

Ulaş-Kılıç, Ö., & Peila-Shuster, J. J. (2023). A test of the Career Construction Theory Model of adaptation with Turkish final year undergraduate students. *Journal of Career Development, 50*(4), 844-859. https://doi.org/10.1177/08948453221129275

Weng, Q. D. (2018). *Manual of the organizational career growth scale.* Research Gate. https://www.researchgate.net/publication/323118278

Yates, J. (2020). Career development theory: An integrated analysis. In P. J. Robertson, T. Hooley, & P. McCash (Eds.), *The Oxford Handbook of Career Development* (pp. 131-142). https://doi.org/10.1093/OXFORDHB/9780190069704.013.10

Zong, Y., & Tsaur, S. H. (2023). Employee resilience and mentoring functions as moderators of the relationship between workplace hazing and affective organizational commitment. *International Journal of Hospitality Management, 114*, Article 103549. https://doi.org/10.1016/j.ijhm.2023.103549

ChatGPT and Education: Bhutanese Teachers' Knowledge, Perceptions, and Practices

Thinley Wangdi[1] and Karma Sonam Rigdel[2]*

[1]*Centers for Language Teaching and Learning, Language Department, School of Languages and General Education, Walailak University, 80160, Thailand*
[2]*Langauge and Geography Department, Wangbama Central School, Ministry of Education and Skills Development, 11001, Bhutan*

ABSTRACT

The increasing research on ChatGPT in education shows the need for more studies to fully understand its potential. This mixed-method study collected data using surveys and open-ended questions to examine the knowledge, perceptions, and practices of 214 Bhutanese in-service teachers regarding the use of ChatGPT in education. The descriptive analysis of the quantitative data showed that teachers were highly knowledgeable, held positive perceptions, and actively used ChatGPT for various educational purposes, while the thematic analysis of the qualitative data explained why participants felt informed, viewed ChatGPT positively, and engaged with it. Teacher participants demonstrated knowledge about ChatGPT, reporting awareness of its potential benefits and drawbacks in education. Their positive perceptions stemmed from the belief that its benefits outweigh its drawbacks in the educational context. Reported benefits of ChatGPT included reducing teachers' workloads, enhancing teaching effectiveness, supporting personalized learning experience, increasing students' motivation and engagement, and contributing to their professional development, among other benefits, while drawbacks included risks of over-dependence, risk of inaccurate information, lack of emotional intelligence, and potential negative impacts on the creativity and critical thinking skills of teachers and students. Finally, participants stated that they used ChatGPT for lesson planning, content creation, understanding complex concepts, developing educational materials, generating assessment questions, and providing student feedback. The study concludes that teacher participants held positive views toward the use of ChatGPT for educational purposes. They specifically mentioned that ChatGPT is easily accessible and user-friendly. Based on the current findings, practical implications and recommendations for future research are provided.

INTRODUCTION

In recent years, Generative Artificial Intelligence (GAI, hereafter) tools have increasingly become a focal point in education. One such innovative GAI tool is ChatGPT, a language model developed by OpenAI, designed to understand and generate human-like text (Nah et al., 2023). Since its release in November 2022, educators worldwide have been interested in exploring its potential for educational practices (Nah et al., 2023). To this day, ChatGPT is widely recognized for its numerous benefits in the context of teaching and learning. ChatGPT was found particularly helpful for students and teachers. Regarding students, ChatGPT is believed to help them ease the search for information associated with their classroom tasks and assignments, respond to inquiries about subjects, and improve writing quality in several languages (Chan & Hu, 2023; Nah et al., 2023). Similarly, ChatGPT has become a resource of information for teachers. It was found beneficial for teachers, especially in designing lesson plans and teaching materials (e.g., scripts, slides, and quizzes), evaluating and grading students' assignments, and giving feedback to students (Mizumoto & Eguchi, 2023; Nah et al., 2023). All these advantages offered by ChatGPT are believed to have helped enhance the effectiveness of teaching and learning (Baidoo-Anu & Ansah, 2023). The benefits of ChatGPT in education were further reinforced by several previous studies conducted in different educational contexts (Chan & Hu, 2023; Kasneci et al., 2023). The integration of ChatGPT

into education, however, is not without limitations. The literature highlights several concerns, including content bias, privacy issues, data security, academic integrity, and the potential for plagiarism (Bolukbasi et al., 2016; Lavidas et al., 2024; Swiecki et al., 2022; Zhai, 2022).

It is interesting to learn how the introduction of ChatGPT into education has helped transform the teaching and learning experiences of students and teachers in many countries. Wangdi and Rigdel (2024) pointed out that "scholars are still debating whether ChatGPT should be integrated into education" (p. 1). They further mentioned that educational policymakers and stakeholders, especially in Bhutan, currently lack proper knowledge of the possible integration of ChatGPT into education, indicating the necessity for a thorough examination of ChatGPT's potential usage in Bhutan. To this end, this study examines the knowledge, perceptions, and practices of in-service Bhutanese teachers regarding the use of ChatGPT in education. Teachers' perspectives were considered in this study because teachers are often viewed as key agents of change that shape students' interaction with AI in the classroom (Aravantinos et al., 2024). Teachers also play a significant role in ensuring the effectiveness of pedagogical practices and technological tools (Wangdi et al., 2023). In other words, the effectiveness of the integration of ChatGPT, for instance, cannot be fully realized without understanding teachers' existing knowledge, perceptions, and practices. The significance of the need

to understand teachers' views and how they embrace technological shifts in the era of AI was also underscored by Nah et al. (2023).

In light of this significance, while several studies have been conducted in other contexts exploring teachers' knowledge (Kaplan-Rakowski et al., 2023; Kohnke et al., 2023; Kuleto et al., 2022), perceptions (Kohnke et al., 2023) and their practices (Nah et al., 2023; Kasneci et al., 2023), none have been found in Bhutan. Bhutan is a unique context because teachers sparingly integrate technology into teaching and learning due to inadequate facilities, poor infrastructure, and unreliable internet connections (Wangdi & Rai, 2022). Therefore, understanding three key aspects—knowledge, which refers to the general functionality of ChatGPT; perception, encompassing the perceived benefits and drawbacks of using ChatGPT in education; and practices, referring to the current use of ChatGPT by teachers in a context of technological disadvantage would be valuable. Exploring their experiences will allow educators to develop strategies for effectively implementing AI tools to improve teaching and learning, especially with limited resources. Most importantly, drawing from the practices of Bhutanese teachers, the findings of the study are expected to offer some evidence-based practical recommendations to educators beyond the research context.

Research Questions

1. How informed are Bhutanese in-service teachers about the general functionality of ChatGPT?

2. What are the perceived benefits and drawbacks of using ChatGPT in education, according to Bhutanese teachers?

3. How do Bhutanese teachers use ChatGPT in their teaching and learning practices?

Theoretical Framework of the Study

The present study is based on Mishra and Koehler's (2006) Technological Pedagogical Content Knowledge (TPACK) and Davis' (1989) Technological Acceptance Model (TAM). These theories are believed to help researchers understand different aspects of educational stakeholders' views on the use of technology in education. These theories were found suitable for the current study because, on the whole, they cover all aspects of what this research was looking for, such as teachers' knowledge, perception, and practices of a certain technology in teaching and learning. TPACK is a theoretical framework developed by Mishra and Koehler (2006) that originated in the field of education, particularly in the context of integrating technology into teaching practices. TPACK is an intersection of three primary forms of knowledge essential for effective teaching: technological knowledge (TK), pedagogical knowledge (PK), and content knowledge (CK). TK refers to teachers' knowledge and ability to use various technologies, technological tools, and related resources. PK is teachers' deep knowledge about the processes and practices or teaching and learning methods. CK refers to teachers' knowledge of the subject matter

(Koehler & Mishra, 2009). The knowledge of TPACK, in general, aids educators in selecting the most suitable and efficient technological tools for teaching (Wangdi et al., 2023).

Likewise, the Technological Acceptance Model (TAM) theory aims to understand users' acceptance and adoption of new technologies based on their perceived usefulness and perceived ease of use. Davis (1989) suggested that individuals are more likely to adopt a technology if they perceive it as useful and easy to use. TAM also considers subjective norms and perceived behavioral control as factors influencing users' attitudes and intentions to use technology. Therefore, guided by TAM, we anticipated that investigating teachers' practices of ChatGPT for teaching and learning, influenced by factors such as perceived usefulness, ease of use, and behavioral intention to use, may provide insights into the possibility of integrating ChatGPT into education.

Study Context

Bhutan is one of Asia's smallest and least populated countries, with a population of over 750,000. Bhutan has historically been isolated from the rest of the world because of its geographical location. For this reason, from educational and technological points of view, Bhutan is still at the infancy level compared to other countries, including its immediate neighboring countries like India, Nepal, and China. More than 55% of Bhutanese people live in rural areas, and their children attend schools with inadequate infrastructure and learning facilities (World Bank, 2019). While the first modern school was established in Bhutan around 1914, Bhutan has historically been known as the last nation in Asia to receive technological facilities such as television, computers, mobile phones, and the internet (Wangdi & Rai, 2022; Wangdi et al., 2023). For this reason and due to insufficient technological and subsequent pedagogical knowledge, not many Bhutanese educators prefer to use technologies in the classroom (Dhendup & Wangdi, 2023) despite being aware of their benefits in teaching and learning. The sparing use of technology in Bhutanese education was evidenced by Wangdi and Rai (2022), who underscored the predicaments faced by teachers and students during the COVID-19 pandemic due to the lack of hands-on experience with technologies and facilities in Bhutanese institutions.

Although one of the recent changes in the Bhutanese education system is to encourage the use of ICT in educational institutions for teaching and learning purposes (see Bhutan Education Blueprint: 2014–2024 [Ministry of Education, 2014]) in line with the 21st-century skills, mobile phones and other portable gadgets in classrooms are still banned at policy levels. Such restrictions from policy levels in Bhutan, despite being aware of the numerous benefits of ICT tools, mobile learning, and, more recently, ChatGPT in teaching and learning, raise questions about Bhutanese policymakers' views on allowing ChatGPT. Do Bhutanese policymakers and educators see ChatGPT as an opportunity to improve

the quality of the Bhutanese education system? Will ChatGPT ever be integrated into Bhutanese education? In what ways can ChatGPT benefit Bhutanese educators and students? Further questions arise in light of Bhutan's historical inclination to observe and integrate technological tools only when they have proven effective, as evidenced by its being the last country in the world to introduce television and preserve its unique culture, tradition, and environment. Therefore, this study was deemed necessary to provide a foundation for Bhutanese policymakers and to guide Bhutanese educators on whether to use ChatGPT in education and, if not, to provide some useful pedagogical practices because ChatGPT has crossed all borders, including Bhutan.

Literature Review

Teachers' Knowledge of ChatGPT

The successful integration of ChatGPT into education significantly depends on teachers' familiarity with ChatGPT. The literature has established a direct correlation between teachers' levels of knowledge about Generative AI tools and the effectiveness of their practices. Theoretically, this argument partially reflects the theory of TPACK (Mishra & Koehler, 2006) in that teachers' pedagogical knowledge positively influences teachers' intention to use technological tools (Wangdi et al., 2023) and then the success of integrating them into education. Empirically, Baidoo-Anu and Ansah (2023) and Kohnke et al. (2023) found that educators with higher

levels of awareness of GAI tools exhibited a greater capacity to integrate them more effectively into teaching and learning. Also, studies show that teachers who understand ChatGPT better are more likely to use it effectively (Kohnke et al., 2023; Reiss, 2021). Recently, a study by Aravantinos et al. (2024), which reviewed 35 Scopus-indexed empirical studies, concluded that teachers play an important role in facilitating students' interaction with AI tools. It emphasized that teachers need to be skilled and knowledgeable to effectively use AI tools for educational purposes. The literature reviewed thus far suggests that teachers should cultivate a strong understanding of ChatGPT to effectively integrate it into their educational practices.

In response to this significance, several studies (e.g., Kaplan-Rakowski et al., 2023; Kohnke et al., 2023; Kuleto et al., 2022) have been conducted, all of which reported high levels of AI knowledge among teachers in their respective contexts. For example, in a study examining the preparedness of 12 instructors at a Hong Kong university to use generative AI for educational purposes, Kohnke et al. (2023) concluded that the participants were familiar with generative AI tools and had a basic understanding of some of their functions. In another study by Kuleto et al. (2022), which examined the AI knowledge of 152 kindergarten teachers in Serbia, the findings revealed that teachers in their context possess a high level of AI knowledge, particularly among younger teachers and those working in modern, technology-rich schools. Their findings

highlighted two important aspects: first, the potential generational shift in digital literacy, and second, the need for AI-focused infrastructure across institutions to enhance teachers' knowledge of AI. Teachers are more likely to use GAI tools such as ChatGPT and report a higher level of understanding if institutions provide adequate AI infrastructure. In this context, Kaplan-Rakowski et al. (2023), who surveyed 147 teachers from the USA, UK, and Canada, noted that those who used GAI more frequently reported greater knowledge and understanding of GAI tools. Overall, the existing literature indicates that teachers may have high levels of knowledge about GAI, such as ChatGPT. However, most reports on teachers' knowledge of GAI come from technologically advanced countries (e.g., Hong Kong, the USA, the UK, and Canada). There is a noticeable gap in the literature regarding teachers' knowledge of ChatGPT in technologically underdeveloped countries like Bhutan, highlighting the need to explore the understanding of Bhutanese teachers in this context. Understanding Bhutanese teachers' knowledge of ChatGPT is crucial because Shabbir et al. (2024) noted that GAI tools like ChatGPT will likely play important roles in economically disadvantaged regions.

Teachers' Perceptions Toward ChatGPT

Concerning teachers' perceptions of ChatGPT as a potential educational tool, some earlier studies focused primarily on the perceived benefits and drawbacks of integrating it into educational practices.

Nevertheless, the findings presented in the literature appeared inconclusive. In the sense that while some studies suggested that teachers hold favorable perspectives about integrating ChatGPT into education (ElSayary, 2024; Kaplan-Rakowski et al., 2023; Kuleto et al., 2022), others presented contrasting views (Fontao et al., 2024; Iqbal et al., 2022), highlighting a need for further study. The conflicting claims in the literature about ChatGPT's integration may stem from its double-edged nature. As previously mentioned, ChatGPT offers benefits and drawbacks. ChatGPT is reported to help teachers create lesson plans, prepare teaching activities, develop assessments, and provide feedback (ElSayary, 2024; Kaplan-Rakowski et al., 2023). Moreover, Aravantinos et al. (2024) asserted that teachers perceive AI tools as transformative tools for enhancing teaching and learning across subjects and appreciate their role in promoting active learning and fostering higher-order thinking skills.

However, a qualitative study conducted by Iqbal et al. (2022) in Pakistan revealed that teachers held negative perceptions of integrating ChatGPT into education. Teachers in their context expressed concerns that ChatGPT increases the risk of cheating and plagiarism within the educational context. Fontao et al. (2024) similarly noted that pre-service teachers in Spain were concerned about the risk of academic dishonesty associated with using ChatGPT in education. They further mentioned that pre-service teachers expressed concern that overusing ChatGPT might limit teachers'

and students' creativity, critical thinking, and problem-solving abilities. A similar concern was raised by Kasneci et al. (2023). The literature discussed thus far on teachers' perceptions of using ChatGPT in education is confounding, giving this study a reason to conduct.

Teachers' Practices

Teachers use ChatGPT for various purposes, driven by expected performance, habit, enjoyment, facilitating conditions, perceived usefulness, and ease of use (Lavidas et al., 2024; Wangdi & Rigdel, 2024). For example, they used to create exam papers, search information on subjects, design teaching and learning activities and lesson plans, review and grade assignments, and provide feedback (Nah et al., 2023); create educational content, personalized learning experiences, and improve student engagement (Kasneci et al., 2023), and many more. While teachers' practices in other educational contexts have been discussed extensively in the literature, not many have disturbed the Bhutanese context, and there is a gap in knowledge on how teachers use ChatGPT for educational purposes in Bhutan. Koehler and Mishra (2009) and Wangdi et al. (2023) suggested that teachers' technological pedagogical knowledge, which derives from their practices, plays a pivotal role in selecting the most suitable and efficient technological tools for their classrooms. Therefore, there was a need to investigate how ChatGPT is being used in the context of the study to effectively integrate ChatGPT into education. Furthermore, understanding teachers' practices helps concerned educational stakeholders realize the need for workshops and training on ChatGPT among teachers. Montenegro-Rueda et al. (2023) divulged that teachers require extensive training to successfully integrate ChatGPT into education. Furthermore, it should be noted that ChatGPT's efficiency cannot be fully realized unless it is practiced and evaluated through hands-on experience. The findings on teachers' practices in this study may serve as a stepping stone toward integrating ChatGPT into education, particularly within the context of the study.

METHOD

Research Design and Participants

This study employed an explanatory sequential mixed method design (Ivankova et al., 2006), combining quantitative (survey questionnaire) and qualitative (open-ended questions) data to obtain a comprehensive understanding of Bhutanese teachers' knowledge, perceptions, and practices regarding ChatGPT in education. This study adopted a mixed-method approach because it helps researchers gain a deeper understanding of the phenomenon under investigation by combining the breadth and depth of information, which is impossible with a singular approach (Almalki, 2016). In this study, simple random sampling was employed to select Bhutanese teachers. A sampling frame was created using publicly available teacher databases, ensuring a diverse representation of educators

from various school levels and regions. This method ensured that the sample was representative of the broader teaching population.

Another benefit of random sampling is that it enhances internal validity in research by minimizing selection bias and ensuring an even distribution of characteristics (e.g., teaching experience, gender), which leads to more reliable results (Robinson, 2013). Similarly, random sampling improves external validity by obtaining a representative sample, allowing the findings to be generalized beyond the sample (Ferguson, 2004). Participants were selected using a random number generator, giving each teacher an equal opportunity to be chosen. Invitations were sent via online platforms, and out of the more than 500 teachers invited, only 214 completed the survey. The low participant turnover may be attributed to the voluntary nature of this study. It could also be due to teachers' time limitations and other responsibilities. In Bhutan, teachers are often burdened with additional tasks alongside their heavy teaching loads.

A total of 214 Bhutanese teachers participated and completed the survey. Most respondents were male, constituting 52.3%, while females made up 47.7%. The age distribution shows a diverse range of respondents from 31 to over 46 years. The respondents' teaching experiences are diverse, with the greatest experience level being those with 6 to 10 years (30.4%), closely followed by those with 11 to 15 years (26.2%). Most respondents were from Higher Secondary Schools, constituting 39.3%. Universities and Middle Secondary Schools also have notable representation, with 16.8% and 20.1%, respectively. The subjects taught are diverse, with a significant percentage involved in teaching Humanities (23.4%), English (22.9%), and Mathematics (22%). Other subjects, including Science, Business Studies, and Dzongkha, also have representation. The detailed information about the respondents is presented in Table 1.

Table 1

Demographic information participants

Characteristics	N	Frequency	Percent
Gender	Male	112	52.3
	Female	102	47.7
	Total	214	100
Age	21–25	28	13.1
	26–30	34	15.9
	31–35	77	36
	36–40	50	23.4
	41–45	21	9.8
	Above 46	4	1.9
	Total	214	100

Table 1 (continue)

Characteristics	N	Frequency	Percent
Teaching Experiences	Less than 1 year	21	9.8
	1–5 years	35	16.4
	6–10 years	65	30.4
	11–15 years	56	26.2
	More than 16 years	37	17.3
	Total	214	100
Institutions	University	36	16.8
	Vocational college	6	2.8
	Higher Secondary School	84	39.3
	Middle Secondary School	43	20.1
	Lower Secondary School	26	12.1
	Others	19	8.9
	Total	214	100
Subject(s) Taught	English	49	22.9
	Mathematics	47	22
	Science	45	21
	Dzongkha	2	.9
	Humanities	50	23.4
	Business studies	7	3.3
	Others	14	6.5
	Total	214	100

Research Instruments

The present study collected data using a single research instrument divided into two sections. The first section comprised a survey questionnaire with seven demographic questions (such as gender, age, and teaching experience) and 33 modified 5-point Likert scale items ranging from 1 (strongly disagree) to 5 (strongly agree). In comparison, the second section included four open-ended questions for follow-up inquiries. The survey questionnaire consisted of six items assessing teachers' knowledge (adapted from Chan & Hu, 2023), 15 items investigating their perceptions (adapted from Kaplan-Rakowski et al., 2023), and

12 items probing their practices (adapted from Nah et al., 2023). The researchers developed four questions with expert input for the open-ended questions, aligning them with the research objectives.

The four open-ended questions were: (1) Do you know ChatGPT? If so, what is your opinion of it? (2) What factors would influence your decision to use or not use ChatGPT in education? Please explain your reasoning. (3) Can you describe a specific event where you used ChatGPT for educational purposes? (4) Do you have any additional thoughts on the potential use of ChatGPT in education? Please explain. The survey and open-ended questions were

assessed for their reliability and validity. The Cronbach's Alpha coefficient value for the survey questionnaire was 0.949, while the open-ended questions were reviewed by two qualitative research experts and pilot-tested. Potential modifications were made, particularly for the open-ended questions, based on expert feedback and pilot analysis. It is important to note that results from the pilot analysis were not included in the final analysis.

Data Collection Procedure

The data was gathered from in-service teachers across Bhutan using online platforms such as Facebook, Telegram and Messenger. These teachers were teaching in different public schools. For ethical purposes, embedded with the electronic survey questionnaire, informed consent was obtained from all participants by requesting them to choose either 'Yes, I am willing to participate' or 'No, I am not willing to participate.' In doing so, all those who participated in the survey consented. Additionally, participants were informed of the voluntary nature of their participation, and the option was given not to respond if they were uncomfortable. Despite reaching out to over 500 teachers, only 214 responded. The entire process of data collection took researchers almost three months.

Data Analysis

In this study, data analysis was carried out in two phases. Before starting the analysis, two researchers collaboratively cleaned the quantitative and qualitative data. Following this data cleaning, the first analysis phase involved a descriptive examination of the quantitative data, utilizing means and standard deviations. The survey results were then interpreted using the mean interpretation scale adapted from Orlanda-Ventayen and Ventayen (2017) as follows: 1 to 1.80 as 'very low,' 1.81 to 2.60 as 'low,' 2.61 to 3.40 as 'moderate,' 3.41 to 4.20 as 'high,' and 4.21 to 5 as 'very high.' The entire process of quantitative analysis was conducted using SPSS version 26.

The second phase of the analysis focused on the qualitative data collected using open-ended questions. The qualitative data was thematically analyzed following the six-step process outlined by Braun and Clarke (2006): (1) familiarizing oneself with the data, (2) initial coding, (3) identifying themes, (4) reviewing themes, (5) defining and naming themes, and (6) producing the final report. The thematic analysis yielded themes corresponding to the research questions through a systematic process. First, the researchers familiarized themselves with the data and then conducted initial coding by identifying patterns related to teachers' knowledge, perceptions, and practices. These codes were grouped into broader themes, ensuring they aligned with the research questions. For example, knowledge about ChatGPT formed the theme of **Teachers' Knowledge,** addressing the first question. The themes were refined, reviewed, and presented clearly, ensuring they directly answered the research questions and were supported by participant responses. Subsequently, the researchers compiled

transcriptions, codes, and themes and then forwarded them to some participants for member checking.

Creswell and Miller (2000) noted that member checking is an important aspect of creating trustworthiness in a study that involves qualitative data because it helps improve the credibility of the research process. Additionally, to further establish the transferability and dependability of the study, which is often referred to as trustworthiness, researchers diligently followed the Nowell et al. (2017) step-by-step approach in conducting thematic analysis. To enhance confirmability, the researchers documented the entire study process, particularly the steps involved in data analysis, which a qualitative research expert audited.

RESULTS

The results of the study are presented in two phases. The first phase involves quantitative findings, while the second phase concentrates solely on substantiating quantitative results using qualitative data.

Teachers' Knowledge of ChatGPT

To ensure data accuracy in this study, only participants who confirmed their awareness of ChatGPT and reported actively implementing it in their teaching and learning practices were considered. Demographic insights revealed that most respondents (98.6%) were acquainted with ChatGPT, while a minimal fraction (1.4%) indicated they were unaware of it. Moreover, 86.9% of participants acknowledged using ChatGPT for educational purposes, while only a few (13.1%) stated they had not yet used it for teaching and learning purposes.

The average mean ($M = 3.66$, $SD = 1.04$) presented in Table 2 shows that participants held high levels of knowledge regarding ChatGPT. Out of 6 items, item 1, "I understand ChatGPT have limitations in their ability to handle complex tasks," was rated the highest with an average mean of 3.99 ($SD = 0.90$). This suggests that teacher-participants are cognizant regarding the limitations of ChatGPT performing complex tasks and its shortcomings. Item 4, "I understand ChatGPT can exhibit biases

Table 2
Teachers' knowledge of ChatGPT

Items	Mean	SD	Levels
1. I understand ChatGPT has limitations in handling complex tasks.	3.99	0.90	High
2. I understand ChatGPT can generate factually inaccurate output.	3.59	1.07	High
3. I understand ChatGPT can generate output that is out of context or inappropriate.	3.49	1.13	High
4. I understand ChatGPT can exhibit biases and unfairness in its output.	3.44	1.15	High
5. I understand that ChatGPT may rely too heavily on statistics, which can limit its usefulness in certain contexts.	3.64	0.98	High
6. I understand that ChatGPT has limited emotional intelligence and empathy, which can lead to insensitive or inappropriate output.	3.82	1.05	High
Average mean	3.66	1.04	High

and unfairness in their output," was rated lowest with a mean of ($M = 3.44$, $SD = 1.15$). Overall, participants appeared to be highly knowledgeable about ChatGPT.

Teachers' Perceptions Toward ChatGPT

The participants held a high level of agreement on ChatGPT's potential benefits in education. The analysis results are

illustrated in Table 3. The average mean ($M = 3.52$, $SD = 1.03$) indicates a positive view of using ChatGPT in teaching and learning. Among many, item 16, "The use of ChatGPT in teaching and learning eases the pressure on me as a teacher," was rated the highest ($M = 3.95$, $SD = 0.97$). This suggests that incorporating ChatGPT eases some of the pressure teachers experience. Further,

Table 3
Teachers' perception toward ChatGPT

Items	Mean	SD	Levels
7. The use of ChatGPT in teaching and learning increases academic achievement (e.g., grades).	3.85	0.92	High
8. The use of ChatGPT in teaching and learning results in students neglecting important traditional learning resources (e.g., library books).	4.11	0.96	High
9. The use of ChatGPT in teaching and learning is effective because I believe I can implement it successfully.	3.83	0.92	High
10. The use of ChatGPT in teaching and learning promotes student collaboration.	3.38	1.19	High
11. The use of ChatGPT in teaching and learning promotes the development of communication skills (e.g., writing and presentation skills).	3.58	1.16	High
12. The use of ChatGPT in teaching and learning is a valuable instructional tool.	3.85	0.92	High
13. The use of ChatGPT in teaching and learning makes teachers feel more competent as educators.	3.83	1.01	High
14. The use of ChatGPT in teaching and learning is an effective tool for students of all abilities.	3.59	1.10	High
15. The use of ChatGPT in teaching and learning enhances my professional development.	3.85	0.87	High
16. The use of ChatGPT in teaching and learning eases the pressure on me as a teacher.	3.94	0.97	High
17. The use of ChatGPT in teaching and learning motivates students to get more involved in learning activities.	3.63	1.04	High
18. The use of ChatGPT in teaching and learning should reduce the number of teachers employed in the future.	3.18	1.38	Moderate
19. The use of ChatGPT in teaching and learning will increase the amount of stress and anxiety students experience.	2.35	1.08	Low
20. The use of ChatGPT in teaching and learning requires extra time to plan learning activities.	2.24	1.01	Low
21. The use of ChatGPT in teaching and learning improves students' learning of critical concepts and ideas.	3.56	1.04	High
Average Mean	3.52	1.03	High

the low levels of concern about increased student stress (M = 2.35, SD = 1.08) and the need for additional planning time (M = 2.24, SD = 1.01) suggest an overall positive perception of incorporating ChatGPT into education. In sharp contrast, item 8, "The use of ChatGPT in teaching and learning results in students neglecting important traditional learning resources (e.g., library books)," was also rated high (M = 4.11, SD = 0.96). This shows that participants are highly concerned that using ChatGPT may lead to students neglecting traditional learning resources.

Teachers' Practices

The result presented in Table 4 indicates that teacher participants in the context use ChatGPT extensively for teaching and learning (M = 3.56, SD = 1.12). The item

analysis revealed that teacher participants had a high level of agreement in using ChatGPT for lesson planning (M = 3.42, SD = 1.24), content creation (M = 3.64, SD = 1.11), personalization (M = 3.71, SD = 1.04), and improving their understanding of complex concepts (M = 3.90, SD = 1.01). Interestingly, it was also observed that educators in this context make moderate use of ChatGPT when it comes to tasks associated with grading and providing feedback (see items 29 and 30).

Qualitative Findings

The qualitative data, comprising responses to open-ended questions, underwent thematic analysis and is presented below. The findings are presented based on three major themes: teachers' knowledge of ChatGPT, teachers' perceptions toward ChatGPT,

Table 4
Teachers' practices

Items	Mean	SD	Levels
22. I use ChatGPT to plan my lesson.	3.42	1.24	High
23. I use ChatGPT to create educational content for teaching and learning.	3.64	1.11	High
24. I utilize ChatGPT to develop personalized learning materials.	3.71	1.04	High
25. I use ChatGPT to adapt teaching materials to meet diverse student needs.	3.56	1.11	High
26. I utilize ChatGPT to enhance student engagement in the classroom.	3.47	1.18	High
27. I find ChatGPT easy to integrate into lesson plans.	3.71	1.01	High
28. I use ChatGPT to better understand complex teaching and learning concepts.	3.90	1.01	High
29. I find ChatGPT helps in the effective grading of assignments.	3.39	1.18	Moderate
30. I use ChatGPT to provide timely and constructive feedback to students.	3.29	1.22	Moderate
31. I use ChatGPT to create a more interactive and dynamic classroom environment.	3.52	1.17	High
32. I use ChatGPT to facilitate brainstorming and the generation or refinement of solutions in problem-solving.	3.53	1.12	High
33. I utilize ChatGPT to enhance the overall teaching and learning experience in the classroom.	3.59	1.05	High
Average Mean	3.56	1.12	High

and teachers' practices, each containing several sub-themes. A frequency count (number of participants responding to the same sub-themes) for open-ended questions was performed to provide a comprehensive understanding of the identified themes and sub-themes. Additionally, excerpts from open-ended questions were incorporated to substantiate these themes.

Teachers' Knowledge of ChatGPT

When asked about their knowledge and understanding of ChatGPT, most participants demonstrated a high level of knowledge regarding ChatGPT. This finding was consistent with the quantitative finding. In general, participants regard ChatGPT as a text-based AI communication tool (86 references), a convenient source of information (77 references), and a valuable AI tool for teaching and learning (43 references). Nonetheless, participants acknowledged the potential risk of inaccuracies in the information generated through ChatGPT. They advised caution (22 references) when incorporating ChatGPT into education and emphasized the importance of actively monitoring and verifying the information generated through ChatGPT (23 references).

> *ChatGPT is like a computer program that talks to you like a smart chat buddy. It uses a bunch of information it learned from the internet to answer your questions and have conversations with you. It is really good, but remember, it is just a machine, not a real person.* (P29)

Teachers' Perceptions Toward ChatGPT

Most participants who responded to open-ended questions (102 references) positively perceived ChatGPT. They stressed that ChatGPT is available 24/7 (76 references) and offers numerous benefits in teaching and learning. Participants specifically underscored that ChatGPT is user-friendly (34 references), resourceful (46 references), and a helpful tool for creating educational content, such as lesson plans and assessments (75 references). Other benefits of ChatGPT in education pointed out by participants included ChatGPT's potential to support personalized learning experiences (63 references), provide academic solutions, especially in academic writing (39), facilitate language learning (12 references), generate ideas (23), promote interactive learning and critical thinking (54 references), provide immediate feedback and assistance (68), help understand complex concepts (96), reduce workload (33), increase students' motivation and engagement (46), enhance knowledge and skills of teachers and students (73). Below are excerpts that support the present findings.

> *It can simplify some concepts; the search can be narrowed to save time for other useful work.* (P34)

> *It is easy to locate and get the required information. We can save time. It gives all the details and is easier to edit and modify in our context.* (P105)

On the other hand, although most participants acknowledged a myriad of

benefits that ChatGPT has for teachers themselves and students, many of them were aware of the possible drawbacks of ChatGPT within educational settings. Participants highlighted teachers and students being over-dependence on ChatGPT (33 references), the risk of inaccurate information (37 references) since ChatGPT lacks emotional intelligence (56 references), the potential to generate biased or inappropriate content (46 references), the chance of losing creativity and critical thinking abilities among teachers and students (20 references), and finally the concern regarding academic integrity, especially plagiarism (74 references).

> *ChatGPT may make mistakes in its responses due to its probabilistic nature or lack of verification. ChatGPT may also mislead by providing inaccurate information.* (P45)

> *Sometimes, the information we tend to excavate may not be that useful. Moreover, it doesn't serve the purpose of responding to all levels of learning abilities. Too much reliance on ChatGPT might negatively impact learners' creativity and critical thinking abilities.* (P135)

Teachers' Practices

Another finding revealed that most teachers (196 references) in Bhutan use ChatGPT in diverse ways to enhance their teaching and learning experiences. These participants reported using ChatGPT to develop and design lesson plans and classroom activities (103 references), explore new pedagogical ideas, and understand complex concepts of textbooks (83 references). Furthermore, participants reported using ChatGPT to generate questions for assessments and assignments, develop educational content such as reports, summaries, and presentation materials (89 references), and offer feedback on assignments, grading, editing, and grammar checking (23 references).

> *ChatGPT helps me to prepare effective lesson plans. I also use it for grading assignments and designing assignment questions.* (P22)

> *I used ChatGPT to generate supplementary learning resources, such as quiz questions, study guides, and additional reading materials. This saves time for teachers and provides students with more tailored resources.* (P166)

DISCUSSION

In light of TPACK (Mishra & Koehler, 2006) and TAM (Davis, 1989), the present study sought to investigate the knowledge, perceptions, and practices of 214 in-service Bhutanese teachers regarding using ChatGPT in education. To this end, this study employed a mixed-method approach, and the data was collected using the survey and open-ended questions. The descriptive analysis of the quantitative data presented that teachers were highly knowledgeable, held positive perceptions, and actively used ChatGPT for various educational purposes, while the thematic analysis of the qualitative data elucidated why participants

felt informed, viewed ChatGPT positively, and engaged with it.

Based on the quantitative data, it was found that the current participants were highly knowledgeable about ChatGPT, a finding that was later corroborated by their responses to open-ended questions. These findings of a high level of cognizance of ChatGPT were consistent with teachers in other contexts, such as Serbia (Kuleto et al., 2022), the USA, the UK, Canada (Kaplan-Rakowski et al., 2023), and Hong Kong (Kohnke et al., 2023). The teachers' high level of knowledge about ChatGPT in this context is likely a result of their frequent use of ChatGPT (Kaplan-Rakowski et al., 2023), which is made possible by its user-friendly design. Participants stated in their qualitative responses that they used ChatGPT frequently. They also reported that ChatGPT was easier to access and use than other educational tools. Theoretically, Davis (1989) suggested that individuals are more likely to adopt a technology if they perceive it as easy to use. Next, the quantitative data revealed that participants were highly aware of several limitations associated with ChatGPT, such as its potential to generate factually inaccurate output, exhibit biases, and lack of emotional intelligence and empathy. While acknowledging these limitations, the qualitative data disclosed that participants viewed ChatGPT as a convenient source of information and a valuable resource for teaching and learning.

Quantitative data indicated that Bhutanese teachers held positive perceptions toward ChatGPT. The qualitative responses

expanded on this, identifying key reasons for their positive views. Teachers' positive perceptions of ChatGPT seemed to derive from their anticipation of the positive impact it could have on both students and teachers. In the qualitative data, participants noted that, in addition to ChatGPT's 24/7 availability and user-friendly interface, it is resourceful and helpful for creating educational content, such as lesson plans and assessments. Further, they highlighted that ChatGPT offers personalized learning experiences, provides academic solutions, facilitates language learning, generates ideas for brainstorming, promotes learning and critical thinking, and delivers immediate feedback and assistance. Additionally, participants pinpointed that ChatGPT aids in understanding complex concepts in a short time, reduces teachers' workloads, increases student motivation and engagement, and enhances the knowledge and skills of teachers and students. These findings were largely in tune with the findings of previous studies conducted in other educational contexts (Baidoo-Anu & Ansah, 2023; Kaplan-Rakowski et al., 2023; Kasneci et al., 2023; Mizumoto & Eguchi, 2023). The overall findings on the perceived benefits of using ChatGPT in education indicated that Bhutanese teachers are willing and ready to adopt ChatGPT. Thus, policymakers and educational stakeholders are advised to look at the possibility of integrating ChatGPT into education in this context.

In addition to the perceived potential benefits of ChatGPT, participants identified some potential limitations of using ChatGPT

in education. To begin with, participants, in their responses to open-ended questions, emphasized that the use of ChatGPT in education could lead to teachers' and students' overreliance on the tool. This concern was similarly noted by Kasneci et al. (2023). Furthermore, in line with the findings of Lubowitz's (2023) study, the current participants raised worries about the potential inaccuracies in data acquired using ChatGPT. A potential explanation for this is the nature of how ChatGPT functions. ChatGPT depends completely on text and resources available on the internet, which may not always be contextually or culturally accurate. The participants also acknowledged that ChatGPT lacks emotional intelligence (cf. Zhai, 2022). This suggests to educational stakeholders and researchers that ChatGPT or any AI tool should not be equated with human teachers but rather should be regarded as supplemental. Consequently, the fear of human teachers being replaced by AI is questionable. Participants further expressed their concerns about the potential adverse impact on the creativity and critical thinking abilities of teachers and students. Most importantly, participants appeared concerned about academic integrity, especially plagiarism, if ChatGPT is allowed to integrate into education. This finding agrees with several other studies (Baidoo-Anu & Ansah, 2023; Swiecki et al., 2022; Zhai, 2022). Overall, it is suggested that policymakers and educators thoroughly assess the potential positive and negative aspects associated with the integration of ChatGPT into

education before implementing it in their respective contexts.

One of the most significant findings of the present study was the specific practices underscored by participants. In quantitative and qualitative data, participants reported using ChatGPT extensively. The use of ChatGPT in technologically disadvantaged contexts, such as Bhutan, could provide significant insights and contribute to the existing research on the possible integration of ChatGPT into education. Although Bhutan is often considered underdeveloped in terms of technological infrastructure (Wangdi & Rai, 2022), it was surprising that most participants had used ChatGPT for various educational purposes. Participants in this study reported using ChatGPT to develop lesson plans, create educational content, and design personalized learning materials. This finding aligns with earlier studies (Nah et al., 2023; Mizumoto & Eguchi, 2023), which also reported that teachers in their contexts use ChatGPT for lesson planning, content creation, and designing personalized learning materials.

Furthermore, similar to Kasneci et al.'s (2023) findings, it appeared that participants in the setting employed ChatGPT to enhance student engagement and create a more engaging and dynamic learning environment. Additional hands-on uses of ChatGPT by Bhutanese teachers included grading assignments, providing feedback, and designing assessment questions. However, participants reported using ChatGPT only to a moderate extent for grading, assessment, and providing

feedback in their survey responses. This limited use is likely due to the newness of ChatGPT and a lack of training on how to use it for assessments. Nevertheless, the findings that teachers also use ChatGPT for assessments and provide feedback to students were in line with the findings reported by Nah et al. (2023) in their study. Further, participants mentioned that they use ChatGPT to learn about difficult concepts in their courses and explore new pedagogical approaches to enhance their instruction. This suggests that ChatGPT has the potential to help improve teachers' content knowledge and teaching effectiveness if used appropriately.

CONCLUSION

Implications

The integration of ChatGPT into education has been a subject of ongoing debate among researchers and educators in recent years. In other words, the future of education has become unpredictable, especially with the advent of AI such as ChatGPT. The literature demonstrates a need for more studies to fully understand the potential integration of ChatGPT into education (Wangdi & Rigdel, 2024). To this end, the present study investigated the knowledge, perceptions, and practices of Bhutanese in-service teachers regarding the use of ChatGPT in education. The overall findings of the current study indicate that teachers in the context were aware of ChatGPT and its potential impact on education. They recognized its positive and negative aspects. Despite these concerns, teachers

held positive perceptions toward ChatGPT and reported using ChatGPT for various educational purposes. For example, teachers reported using ChatGPT for lesson planning, content creation, assessment development, grasping complicated topics, creating educational materials, generating questions, and providing feedback to students.

This trend of Bhutanese teachers using ChatGPT for different educational purposes indicates a significant shift toward ChatGPT-assisted teaching in Bhutan. To build on these practices, Bhutan's Ministry of Education and Skill Development (MoESD), policymakers, and educators should work together to provide more targeted training, increasing the effectiveness of ChatGPT's implications in Bhutanese education. For example, training teachers to create personalized learning materials that cater to the individual needs of students, develop inclusive resources for marginalized learners (including those with special needs), and promote autonomous learning would be highly beneficial for maximizing the advantages of ChatGPT. Similarly, it is recommended that efforts be made to address the concerns disclosed in this study, such as the potential loss of creativity, degraded critical thinking abilities, over-dependence, cheating, plagiarism, and other ethical issues. This could make ChatGPT integration in Bhutan more effective and advantageous. Therefore, policymakers are encouraged to create guidelines and structured policies that govern the use of ChatGPT in Bhutan's educational system.

More specifically, teachers' high level of knowledge about ChatGPT (including its benefits and drawbacks), positive perceptions, and extensive engagement with ChatGPT indicate their readiness to integrate ChatGPT for educational purposes and teaching. The MoESD, policymakers, institutional leaders, and other educational stakeholders are thus encouraged to consider strategies for integrating ChatGPT-assisted curricula and providing comprehensive training programs. It is important to note that institutions around the world, including those in economically challenged countries, are now including AI courses to equip students with fundamental skills for an AI-driven job market in the future (Shabbir et al., 2024). This suggests that Bhutan's learners could benefit immensely in the future from including AI-related courses in curricula. It is, therefore, recommended to take immediate action and work on integrating AI-related courses into curricula and training, and this can be started from teacher training institutes because, as stated earlier, teachers serve as key agents in shaping students' interactions with AI (Aravantinos et al., 2024) and ensuring the successful integration of technological tools in education (Wangdi et al., 2023).

Limitations and Recommendations

While this study offers valuable insights into the integration of ChatGPT into education from teachers' perspectives, it is important to acknowledge some limitations. First, the sample size may not represent all Bhutanese teachers. Therefore, we advise being careful before generalizing the findings presented in this study. Although our findings aligned with most previous studies, we cannot assure that they will be generalizable to other educational contexts. Second, the use of self-reported instruments, which often leads to response bias, may have influenced our present findings. First, future researchers are encouraged to conduct a more extensive, nationwide study that incorporates the perspectives of teachers, policymakers, educational stakeholders, and students to address these limitations. This broader approach would provide a comprehensive understanding of the feasibility, challenges, and potential benefits of integrating ChatGPT into Bhutanese education. Second, there is a need for empirical studies to confirm present findings and to comprehensively understand the potential integration of ChatGPT into education.

Future researchers are advised to conduct experimental studies on the impact of integrating ChatGPT into education because there is a huge gap in knowledge in this domain. This would address the current knowledge gap and provide data on how ChatGPT influences teaching methodologies, student engagement, and learning outcomes. Next, our findings revealed that teachers disagree with the fact that the integration of ChatGPT would increase learners' anxiety and stress. In line with this, since research on emotions in education is one of the emerging topics in the educational field, we suggest future researchers investigate the impact of the integration of GAI into education on

teachers' and learners' emotional states. Researching potential sources of positive (enjoyment, pride, joy, happiness, and love) and negative (anxiety, stress, boredom, and anger) emotions derived from using GAI and other chatbots and their impact on students' learning outcomes and teachers' and students' well-being would be interesting.

Despite limitations, the current study's findings hold significant relevance for the Bhutanese context. The study offers a fresh view of in-service Bhutanese teachers integrating GAI, such as ChatGPT, into education. Policymakers and leaders of institutions can use these current findings as baseline data to consider the possibility of integrating ChatGPT into the Bhutanese education system. The findings can also be beneficial for teachers in facilitating informed decision-making regarding the integration of ChatGPT into teaching and learning because they offer insights into both the potential benefits and drawbacks of using ChatGPT for educational purposes. Most importantly, this study outlines various evidence-based practices of ChatGPT for teaching and learning among teachers in the context. This can serve as a guideline for teachers within and beyond the context of the potential integration of ChatGPT in their classrooms. By offering practical guidelines and real-world applications of ChatGPT, this study not only contributes to the academic understanding of the potential integration of ChatGPT but also has the potential to enhance teaching efficiency and improve student learning outcomes within

the community. This, in turn, may help teachers ease their workloads, which is one of the biggest challenges among teachers across the globe.

ACKNOWLEDGEMENT

REFERENCES

Almalki, S. (2016). Integrating quantitative and qualitative data in mixed methods research--challenges and benefits. *Journal of Education and Learning*, *5*(3), 288-296. https://doi.org/10.5539/jel.v5n3p288

Aravantinos, S., Lavidas, K., Voulgari, I., Papadakis, S., Karalis, T., & Komis, V. (2024). Educational approaches with AI in primary school settings: A systematic review of the literature available in Scopus. *Education Sciences, 14*(7), Article 744. https://doi.org/10.3390/educsci14070744

Baidoo-Anu, D., & Ansah, L. O. (2023). Education in the era of generative artificial intelligence (AI): Understanding the potential benefits of ChatGPT in promoting teaching and learning. *Journal of AI, 7*(1), 52-62. https://doi.org/10.61969/jai.1337500

Bolukbasi, T., Chang, K.-W., Zou, J., Saligrama, V., & Kalai, A. (2016). Man is to computer programmer as woman is to homemaker? Debiasing word embeddings. In D. D. Lee, U. von Luxburg, R. Garnett, M. Sugiyama, & I. Guyon (Eds.), *NIPS'16: Proceedings of the 30th International Conference on Neural Information Processing Systems*. Curran Associates Inc.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research*

in Psychology, *3*(2), 77-101. https://doi.org/10.1191/1478088706qp063oa

Chan, C. K. Y., & Hu, W. (2023). Students' voices on generative AI: perceptions, benefits, and challenges in higher education. *International Journal of Educational Technology in Higher Education, 20*, Article 43. https://doi.org/10.1186/s41239-023-00411-8

Creswell, J. W., & Miller, D. L. (2000). Determining validity in qualitative inquiry. *Theory into Practice*, *39*(3), 124-130. https://doi.org/10.1207/s15430421tip3903_2

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly, 13*(3), 319-340. https://doi.org/10.2307/249008

Dhendup, S., & Wangdi, T. (2023). Exploring university students' acceptance of e-learning using E-learning Acceptance Measure (ELAM) in Bhutan: A validation study. *The Journal of Educators Online*, *20*(4). https://doi.org/10.9743/JEO.2023.20.4.6

ElSayary, A. (2024). An investigation of teachers' perceptions of using ChatGPT as a supporting tool for teaching and learning in the digital era. *Journal of Computer Assisted Learning*, *40*(3), 931-945. https://doi.org/10.1111/jcal.12926

Ferguson, L. (2004). External validity, generalizability, and knowledge utilization. *Journal of Nursing Scholarship*, *36*(1), 16-22. https://doi.org/10.1111/j.1547-5069.2004.04006.x

Fontao, C. B., Santos, M. L., & Lozano, A. (2024). ChatGPT's role in the education system: Insights from the future secondary teachers. *International Journal of Information and Education Technology*, *14*(8), 1035-1043. https://doi.org/10.18178/ijiet.2024.14.8.2131

Iqbal, N., Ahmed, H., & Azhar, K. A. (2022). Exploring teachers' attitudes towards using ChatGPT. *Global Journal for Management and Administrative Sciences*, *3*(4), 97-111. https://doi.org/10.46568/gjmas.v3i4.163

Ivankova, N. V., Creswell, J. W., & Stick, S. L. (2006). Using mixed-methods sequential explanatory design: From theory to practice. *Field Methods*, *18*(1), 3-20. https://doi.org/10.1177/1525822X05282260

Kaplan-Rakowski, R., Grotewold, K., Hartwick, P., & Papin, K. (2023). Generative AI and teachers' perspectives on its implementation in education. *Journal of Interactive Learning Research, 34*(2), 313-338.

Kasneci, E., Sessler, K., Küchemann, S., Bannert, M., Dementieva, D., Fischer, F., Gasser, U., Groh, G., Günnemann, S., Hüllermeier, E., Krusche, S., Kutyniok, G., Michaeli, T., Nerdel, C., Pfeffer, J., Poquet, O., Sailer, M., Schmidt, A., Seidel, T., … & Kasneci, G. (2023). ChatGPT for good? On opportunities and challenges of large language models for education. *Learning and Individual Differences*, *103*, Article 102274. https://doi.org/10.1016/j.lindif.2023.102274

Koehler, M., & Mishra, P. (2009). What is technological pedagogical content knowledge (TPACK)? *Contemporary Issues in Technology and Teacher Education*, *9*(1), 60-70.

Kohnke, L., Moorhouse, B. L., & Zou, D. (2023). Exploring generative artificial intelligence preparedness among university language instructors: A case study. *Computers and Education: Artificial Intelligence*, *5*, Article 100156. https://doi.org/10.1016/j.caeai.2023.100156

Kuleto, V., Ilić, M.P., Bucea-Manea-Ţoniş, R., Ciocodeică, D.-F., Mihălcescu, H., & Mindrescu, V. (2022). The attitudes of K–12 schools' teachers in Serbia towards the potential of artificial intelligence. *Sustainability*, *14*(14), Article 8636. https://doi.org/10.3390/su14148636

Lavidas, K., Voulgari, I., Papadakis, S., Athanassopoulos, S., Anastasiou, A., Filippidi,

A., Komis, V., & Karacapilidis, N. (2024). Determinants of humanities and social sciences students' intentions to use artificial intelligence applications for academic purposes. *Information*, *15*(6), Article 314. https://doi.org/10.3390/info15060314

Lubowitz, J. H. (2023). ChatGPT, an artificial intelligence chatbot, is impacting medical literature. *Arthroscopy, 39*(5), 1121-1122. https://doi.org/10.1016/j.arthro.2023.01.015b

Ministry of Education. (2014). *Bhutan Education Blueprint: 2014-2024, Rethinking Education*. Royal Government of Bhutan.

Mishra, P., & Koehler, M. J. (2006). Technological pedagogical content knowledge: A framework for integrating technology in teachers' knowledge. *Teachers College Record, 108*(6), 1017-1054. https://doi.org/10.1111/j.1467-9620.2006.00684.x

Mizumoto, A., & Eguchi, M. (2023). Exploring the potential of using an AI language model for automated essay scoring. *Research Methods in Applied Linguistics*, *2*(2), Article 100050. https://doi.org/10.1016/j.rmal.2023.100050

Montenegro-Rueda, M., Fernández-Cerero, J., Fernández-Batanero, J.M., López-Meneses, E. (2023). Impact of the implementation of ChatGPT in education: A systematic review. *ComputerS, 12*(8), Article 153. https://doi.org/10.3390/computers12080153

Nah, F. F.-H., Zheng, R., Cai, J., Siau, K., & Chen, L. (2023). Generative AI and ChatGPT: Applications, challenges, and AI-human collaboration. *Journal of Information Technology Case and Application Research*, *25*(3), 277-304. https://doi.org/10.1080/15228053.2023.2233814

Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic analysis: Striving to meet the trustworthiness criteria. *International Journal of Qualitative Methods*, *16*(1). https://doi.org/10.1177/160940691773

Orlanda-Ventayen, C. C., & Ventayen, R. J. M. (2017). Role of social media in education: A teachers' perspective. *ASEAN Journal of Open and Distance Learning*, *9*(2), 1-7.

Reiss, M. J. (2021). The use of AI in education: Practicalities and ethical considerations. *London Review of Education, 19*(1). https://doi.org/10.14324/LRE.19.1.05

Robinson, O. C. (2013). Sampling in interview-based qualitative research: A theoretical and practical Guide. *Qualitative Research in Psychology*, *11*(1), 25-41. https://doi.org/10.1080/14780887.2013.801543

Shabbir, A., Rizvi, S., Alam, M. M., & Su'ud, M. M. (2024). Beyond boundaries: Navigating the positive potential of ChatGPT, empowering education in underdeveloped corners of the world. *Heliyon*, *10*(16), Article e35845. https://doi.org/10.1016/j.heliyon.2024.e35845

Swiecki, Z., Khosravi, H., Chen, G., Martinez-Maldonado, R., Lodge, J. M., Milligan, S., Selwyn, N., & Gašević, D. (2022). Assessment in the age of artificial intelligence. *Computers and Education: Artificial Intelligence, 3*, Article 100075. https://doi.org/10.1016/j.caeai.2022.100075

Wangdi, T., Dhendup, S., & Gyelmo, T. (2023). Factors influencing teachers' intention to use technology: Role of TPACK and facilitating conditions. *International Journal of Instruction, 16*(2), 1017-1036. https://doi.org/10.29333/iji.2023.16254a

Wangdi, T., & Rai, A. (2022). Teaching online during the Covid pandemic in rural Bhutan: Challenges and coping strategies. *South Asia Research*, *43*(1), 83-96. https://doi.org/10.1177/02627280221120337

Wangdi, T., & Rigdel, K. S. (2024). Exploring perceived factors influencing teachers' behavioural intention to use ChatGPT for teaching. *Journal of Education for Teaching,*

51(1), 202-204. https://doi.org/10.1080/026074 76.2024.2362197

World Bank. (2019). *Poverty, vulnerability, and welfare in Bhutan: Progress and challenges*. World Bank Group. https://documents1.worldbank.org/curated/en/532991596197426851/pdf/Poverty-Vulnerability-and-Welfare-in-Bhutan-Progress-and-Challenges.pdf

Zhai, X. (2022). *ChatGPT user experience: Implications for education.* SSRN. https://doi.org/10.2139/ssrn.4312418

SOCIAL SCIENCES & HUMANITIES

The 2022 Johor State Elections and the 15th General Election: Voter Age Dynamics and the Rural-urban Continuum

Khairul Syakirin Zulkifli*, Jean Why Sim, and Muhammad Ainul Hakim Norazmi

Policy and Research Division, Institut Masa Depan Malaysia, 192, Jalan Ara, Bangsar, 59100 Kuala Lumpur, Malaysia

ABSTRACT

This study investigates the correlations between electoral outcomes and voting behavior in Johor during the 15th State Election, leading up to Malaysia's 15th General Election (GE15). The analysis focuses on the relationship between age, ethnic majority constituencies, and the rural-urban continuum, using voting stream results to identify key patterns. The findings reveal that senior voters in Malay-majority constituencies, across all geographical areas, largely continued to support Barisan Nasional (BN) despite a gradual decline in their overall backing. In contrast, Perikatan Nasional (PN) emerged as an appealing alternative for youth voters, particularly in rural and semi-urban Malay-majority constituencies. Meanwhile, Pakatan Harapan (PH) retained dominance in mixed and Chinese-majority semi-urban and urban constituencies, although its support among senior voters declined compared to the 14th General Election (GE14). Overall, the election results, spanning from the state elections to GE15, demonstrate a strong relationship between partisanship and voter turnout. This finding highlights the intricate relationship between voter allegiance and turnout, shaped by demographic, geographical, and contemporary issues.

Keywords: 15th General Election, Johor, partisanship, state-election, voting behavior

INTRODUCTION

On March 12, 2022, the Johor State Election was held seven months before the 15th Malaysian Election (GE15), marking the fourth state election after the 14th General Election (GE14). According to Clause 23, Part Two of the Johor State Constitution 1895, the state is permitted to hold its elections independently of the federal election (Johor State Constitution, 1895/2008). Several states have held

elections separately since Malaysia's first general election, including Kelantan in 1974, Sarawak in 1979, Melaka in 2021, and Sabah in 1981 and 2020, among others. The primary reasons for holding the election were issues related to political stability and their potential impact on state economic development, as reported by mainstream media (Noh, 2022).

Although elections are conducted in accordance with constitutional provisions, they occur within a political framework dominated by parties that control key institutions. Azlan and Nadzri (2023) categorize Malaysia's dominant regimes, based on power-holding parties, as either semi-democratic (Case, 1993) or electoral authoritarian (Wong, 2018). In this context, power-holding parties in Malaysia exert considerable influence over elections, often restructuring the political landscape and undermining opposition mobilization efforts Azlan and Nadzri (2023). As the power holder in the Johor state government, Barisan Nasional (BN) opted to hold the election following the success of the 2021 Melaka state election, with the expectation that a lower voter turnout would work to its advantage.

The Johor State Election of 2021 holds significant importance in electoral analysis, as it marked the first election to implement two key reforms: reducing the minimum voting age from 21 to 18 and introducing Automatic Voter Registration (AVR). These changes are pivotal in the context of Malaysia's evolving electoral landscape. Moreover, the 2021 Johor election was

the final electoral contest before the 15th General Election (GE15), positioning it as a key indicator for political campaigns. Johor's historical and political significance is further underscored by its status as the birthplace of the United Malays National Organization (UMNO), Malaysia's oldest political party. While UMNO experienced a poor performance in GE14, it subsequently regained momentum in the post-GE14 by-elections and during the Melaka State Election of 2021.

This article employs voting stream results to analyze voting patterns by age group in Johor. First, we categorized age groups based on score sheets and electoral roll data. We examined the electoral outcomes by considering ethnic majority seats and the rural-urban continuum. Lastly, we analyzed voter turnout rates across different age groups and applied partisanship theory to assess the factors influencing electoral performance in the Johor elections. The article aims to contribute to the ongoing discourse on voting behavior in Malaysia through this approach.

Theoretical Framework

Converse (1976) posits that age is a significant predictor of election outcomes, with individuals more exposed to politics often developing a stronger attachment to political parties. Similarly, Dassonneville (2017) suggests that age influences electoral results in two primary ways: voter turnout and the level of partisanship, both of which follow a curvilinear relationship. Thus, age adds an additional layer of analysis

to understanding electoral outcomes, as it interacts with voting decisions and electoral changes. This interaction complements other established variables used to explain voting behavior, such as ethnic voting (Mohamad & Suffian, 2023; Vasil, 1980), socio-economic factors (Gomez & Jomo, 1997), geographical differences (Ostwald & Subhan, 2021), and the effects of ethnic structure and urbanization (Dettman & Pepinsky, 2023). Despite these multiple factors, the concept of ethnic voting, driven by identity politics, remains central to understanding voting behavior in Malaysia. Vasil (1980) highlights that since Malaysia's first general election, elections have been largely divided along ethnic lines, a point reinforced by Mohamad and Suffian (2023) in their post-GE15 analysis.

Normative patterns of voting behavior suggest that younger individuals tend to have lower voter turnout, while older voters are more likely to participate in elections (Bhatti & Hansen, 2012; Konzelmann et al., 2012). This trend aligns with Converse's (1969, 1976) foundational work on 'learning through exposure,' which posits that greater exposure to political processes over time leads to stronger partisan attachments (Converse, 1969). As a result, age is significantly linked to partisanship, with older individuals often displaying stronger political loyalties. Partisanship, in turn, serves as a motivator for voter turnout, with individuals more likely to vote in exchange for loyalty to or alignment with a political party's platform or ideologies. Furthermore, older voters tend to favor political parties

that align with conservative economic and authoritarian values. However, as Dassonneville (2017) notes, previous studies (Goerres, 2008; Tilley, 2005) have not consistently found strong correlations between age and these variables, indicating that the relationship between age, political ideology, and voter behavior remains complex and multifaceted.

Sudden increases in youth voter turnout have the potential to significantly disrupt the dominance of powerholder parties (Center for Information & Research on Civic Learning and Engagement, 2018; Sloam & Henn, 2019). In Malaysia, Welsh (2018) asserts that youth have the capacity to act as change agents, prompting political parties to increasingly focus on engaging this demographic. Liow (2011) explores the role of the youth wing within Parti Islam Se-Malaysia (PAS), emphasizing that this group plays a critical role in political mobilization, including participation in demonstrations and other forms of civic engagement. Hed and Grasso (2020) further argue that youth are involved in conventional political activities, such as voting, and unconventional forms of political action, including petitions, boycotts, and protests. Moreover, young people in Malaysia have actively participated in social activism to highlight and address key socio-political issues, such as poverty, corruption, and institutional abuse (Ting & Ahmad, 2021). In the context of electoral behavior, Waikar (2020) suggests that the Barisan Nasional (BN) party's emphasis on Malay-Muslim supremacy was a key factor in its inability to

secure the support of younger voters during the 14th General Election (GE14), further illustrating the shifting political landscape influenced by youth engagement.

Another important variable considered in this article is the rural-urban continuum and ethnic voting. Previous analyses of rural-urban voting patterns suggest that opposition parties dominated urban areas between GE12 and GE14 (Ng et al., 2020). However, this framework overlooks certain urban constituencies, such as Kota Bharu and Kuala Terengganu, which Parti Islam Se-Malaysia (PAS) won in both GE14 and GE15. Additionally, Perikatan Nasional (PN) secured victories in urban seats such as Kangar, Alor Setar, Kuantan, and Gombak. Dettman and Pepinsky (2023) and E. Ong (2020) argue that while the rural-urban divide remains an important factor in analyzing Malaysian voting behavior, it must be considered in conjunction with the ethnic composition of constituencies. Furthermore, institutional factors, such as the nomination of competing candidates or parties and the effectiveness of electoral machinery, play a crucial role. These elements are deeply influenced by the ethnic composition or social structure of a constituency, reinforcing the centrality of identity politics in shaping electoral outcomes.

Partisanship refers to voters' long-standing psychological and social attachments toward political parties or objects (Dinas, 2017). Several factors influence the development of partisanship, including historical legacies (Peisakhin, 2012), public policies (Horowitz, 1989), class voting (Evans & Tilley, 2017), early socialization (Bartels, 2002; Beck & Jennings, 1991; Green et al., 2002), religious affiliations (Green et al., 2002), and the effects of nation-building programs (Ostwald & Subhan, 2021). These factors suggest that older voters, with more extensive historical experience in democratic systems, tend to develop stronger partisan attachments. However, Dalton (2002) argues that partisanship has declined in recent times, a trend attributed to modernization, where increased educational attainment and cognitive mobilization among voters have reduced the influence of traditional party loyalties.

METHOD

Although the Election Commission (EC) of Malaysia's voting stream results data primarily offers information on voting districts and outcomes for each stream, it remains a valuable resource for analyzing voting patterns by age group. This data also provides insights into how urbanization and ethnic composition vary across constituencies (Hutchinson & Zhang, 2022). Johor, for instance, is divided into 949 voting districts, with an average of 17 districts per seat (Hutchinson & Zhang, 2022). The streams are numbered from one to twelve, as observed in both the Johor state elections and GE15, with the stream numbers adjusted based on voter age and the total number of voters within each constituency. Utilizing the average age of voters per lane and the rural-urban continuum, we have developed the following classification as in Table 1.

Table 1
Classification of voter's age and rural-urban continuum

Classification of voters	Rural	Semi-Urban	Urban
Senior	Lanes 1 & 2	Lanes 1 & 2	Lanes 1 & 2
Middle-Aged	Lanes 3	Lanes 3 & 4	Lanes 3 & 4
Youth	Lanes 4 above	Lanes 5 above	Lanes 5 above

Note. Classification: Senior = 50 years and above; Middle-aged = 36 to 49 years; Youth = 18 to 35 years old. This applies to electoral rolls in the 2022 state elections and GE15 in Johor

By comparing the electoral roll with the voting streams, we categorized voters by age based on their average age within each lane. We also considered the minimum and maximum ages of voters in each lane to establish the corresponding age ranges. Senior voters, typically aged 50 and above, were primarily found in lanes 1 and 2. This finding aligns with Khor's (2015) and Khor and Chia's (2020) study on voting patterns in Federal Land Development Authority (FELDA) areas, which emphasized the prevalence of senior voters in these categories. This age group was represented across rural, semi-urban, and urban seats. Middle-aged voters, aged 36 to 49 years, were primarily assigned to lane 3 in rural areas and lanes 3 and 4 in semi-urban and urban constituencies. Youth voters, defined as those 35 years and younger, were assigned to lanes 4 and above in rural seats and lanes 5 and above in semi-urban and urban seats. While a small number of voters did not fit within these defined categories, their presence was minimal.

In this analysis, we focus on the contribution of each voting stream to the overall electoral outcomes achieved by political parties. By examining vote contributions across various streams, we identify which lanes had the most significant impact on a party's vote percentage. Using this method, we compared the voting stream results from GE12, the 2022 state election, and GE15 while analyzing the data across rural-urban divides and ethnic majority constituencies. The categorization of each constituency in Johor was based on the urbanization levels defined by Tindak Malaysia (n.d.). For ethnic categorization, the constituencies were classified as follows: High Malay Majority Seats (HMM) with more than 70% Malay voters, Medium Malay Majority Seats (MMM) with 60%–69% Malay voters, Low Malay Majority Seats (LMM) with 50%–59% Malay voters, Chinese Majority Seats (CM) with more than 50% Chinese voters, and Mixed Seats (Mix), where no single ethnic group makes up more than 50% of the voters.

RESULTS

The outcomes of the Johor state election in 2022 significantly differed from those of the GE15, diverging from Johor's historical trend where state and parliamentary voting patterns had closely aligned since GE12 (Table 2). In the state election, Barisan Nasional (BN) secured a decisive victory, winning 40 out of 54 seats, a substantial increase from the 17

Table 2

Comparison of turnout in rural-urban and votes received (GE14-GE15)

Rural = 17 Seats		
GE14	**2022 State Election**	**GE15**
Vote Received:	**Vote Received:**	**Vote Received:**
BN: 139,629 = 52%	BN: 128,261 = 58%	BN: 137,119 = 45%
PH: 111,013= 41%	PH: 28,296 = 13%	PH: 637,36 = 21%
PN: 19,996 = 7%	PN: 64,448 = 29%	PN: 102,897=34%
● **Rural Turnout**:74%	● **Rural Turnout**: 52%	● **Rural Turnout**: 74%
Party Won:	**Party Won:**	**Party Won:**
BN: 13/17	BN: 16/17	BN: 12/17
PH: 4/17	PN: 1/17	PH: 2/17
		PN: 3/17
Semi-Urban = 22 Seats		
GE14	**2022 State Election**	**GE15**
Vote Received:	**Vote Received:**	**Vote Received:**
BN: 181,506 = 41%	BN: 197,741 = 49%	BN: 178,405 = 34%
PH: 221,583 = 50%	PH: 105,513 = 26%	PH: 198,502 = 38%
PN: 40,235= 9%	PN: 99,540 = 25%	PN: 141,300 = 27%
● **Semi-Urban Turnout**: 76%	● **Semi-Urban Turnout**: 52%	● **Semi-Urban Turnout**: 76 %
Party Won:	**Party Won:**	**Party Won:**
BN: 6/22	BN 18/22	BN: 6/20
PH: 15/22	PH: 3/22	PH: 11/20
PN (PAS): 1/22	PN:1/22	PN: 3/20
Urban = 17 Seats		
GE14	**2022 State Election**	**GE15**
Vote Received:	**Vote Received:**	**Vote Received:**
BN: 226,274 = 31%	BN: 244,744 = 37%	BN: 271,547= 26%
PH: 453,426 = 61%	PH: 275,581 =41%	PH: 536,739 = 51%
PN: 62,083 = 8%	PN: 143,880 = 22%	PN: 252,435 = 24%
● **Urban Turnout:** 72%	● **Urban Turnout**: 45%	● **Urban Turnout**: 72%
Party Won:	**Party Won:**	**Party Won:**
PH: 17/17	BN:6/17	Urban GE15:
	PH: 9/17	PH: 15/17
	PN: 1/17	PN: 2/17

Sources: Election Commission of Malaysia (2018, 2022a, 2022b)
Note. Only 54 out of the 56 seats were analyzed in GE15, as the Segamat parliamentary results were petitioned, affecting the N1 Buloh Kasap and N2 Jementah constituencies. These seats were excluded from the analysis due to the legal challenge surrounding the election results

seats it had won in GE14. Pakatan Harapan (PH) captured 13 seats, and Perikatan Nasional (PN) won 3 seats. BN's popular vote rose to 43%, a 5% increase from GE14. Meanwhile, PH's share of the popular vote plummeted from 53% in GE14 to 26% in the state election, while PN saw a significant increase in its vote share, rising from 8% to 24%. In contrast, during GE15, BN's popular vote decreased to 31%, PH's vote share surged from 26% to 42%, and PN's vote share modestly increased by 2%.

The shift in vote shares from GE14 to GE15 highlights a clear correlation

between ethnic majority seats, the rural-urban continuum, and party performance. PH has maintained dominance in mixed and Chinese-majority urban seats in the state election and GE15. Meanwhile, BN, represented by UMNO, has retained a strong presence in Malay-majority rural constituencies. However, in rural and semi-urban Malay-majority seats, BN's vote share declined as PN's influence grew, especially in the state elections leading up to GE15. As reflected in the voting streams, voter turnout patterns showed consistency across age groups and rural-urban constituencies in GE15. A noticeable difference in voting patterns was observed in the state election, particularly in the rural-urban divide (Figure 1).

Popular Votes: Age Group and Rural-urban Seats

In both the state election and GE15, BN received more youth votes than PN and PH in rural seats (Figure 2). The percentage of youth votes for BN increased significantly, rising from 8% in GE12 to 18% in GE15.

However, as shown in Figures 3 and 4, BN's support among senior and middle-aged voters in rural seats gradually declined, dropping from 47% in GE12 to 23% in GE15. Despite controlling the state and Federal governments in 2021, BN's overall popular vote has remained stagnant since GE14.

BN's support in semi-urban seats has shown a decline across all age groups in GE15 compared to GE12, although the coalition had performed better in GE13. Notably, the percentage of senior voters supporting BN dropped significantly, from 47% in GE12 to 18% in GE15 (Figure 3). A similar decline was observed among middle-aged voters. Youth support for BN exhibited fluctuations, decreasing from 13% in GE14 to 10% in GE15. In contrast, PAS's partnership with Parti Pribumi Bersatu Malaysia (BERSATU) has led to substantial gains, particularly in the state elections and GE15. Support for PN among youth voters surged, increasing from 4% in GE14 to 12% in the state election and reaching 15% in GE15 (Figure 2).
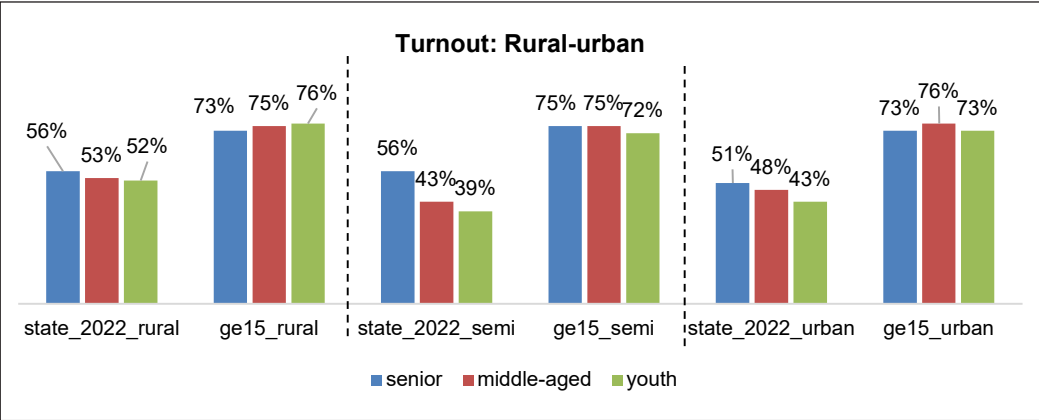
Figure 1. Voters' turnout by age and rural-urban continuum

PN's popular vote, particularly based on PAS's results, showed a notable increase in youth support in rural seats from GE12 to GE15. As illustrated in Figure 2, youth support for PN rose significantly from 2% in GE12 to 15% in GE15. Despite sharing similar political aspirations with BN, most senior and middle-aged voters remained hesitant to switch their allegiance. PAS, in particular, received minimal support from middle-aged voters in rural areas, with only a 5% increase in support from GE14 to GE15. Meanwhile, senior voter support for PAS rose by 7%.

Both BN and PN struggled in urban seats, where most constituencies are multiethnic with a Chinese majority. This posed a significant challenge for the conservative Malay Islamic party, as it failed to garner substantial support despite efforts from Chinese-based component parties, such as the Malaysian Chinese Association (MCA),

Malaysian Indian Congress (MIC), and Parti Gerakan Rakyat Malaysia (Gerakan). Notably, BN's vote share in GE12 sharply contrasted with PH's vote share in the same election (Table 2). The percentage of senior citizens supporting BN in GE12 dropped drastically to just 10% by GE15. While PN saw increased support among younger and older voters in the state elections leading up to GE15, these gains did not substantially affect PH's performance in the national election.

PH's performance in rural seats was the weakest compared to its results in semi-urban and urban areas, primarily due to a lack of support from senior and middle-aged voters, except in GE14. The surge of senior voters supporting PH in GE14 was likely one of the key factors behind the party's success in Johor (Figure 3). However, PH saw an increase in youth votes in GE15 compared to the state election, which might
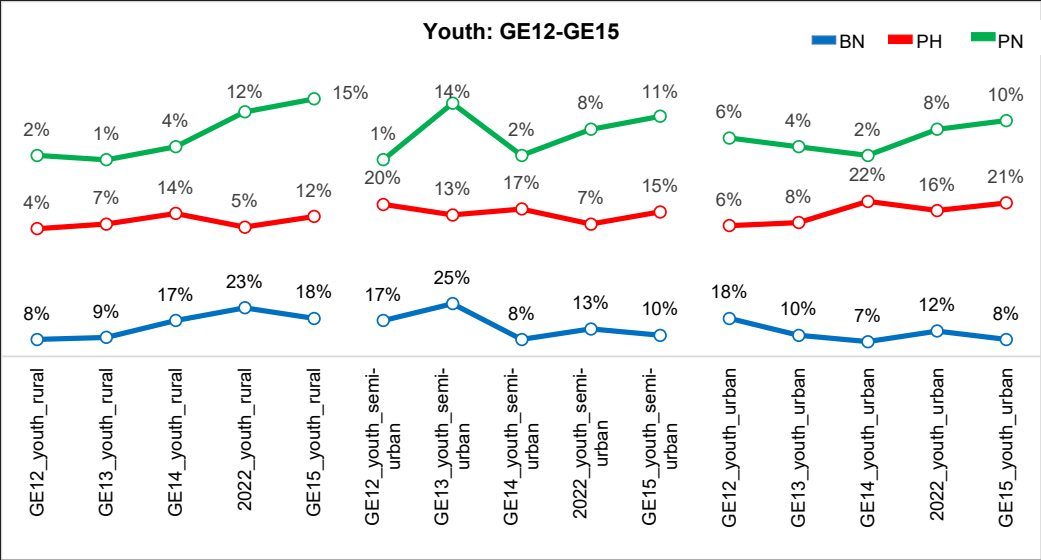
Figure 2. Youth voting patterns by rural-urban: GE12–GE15
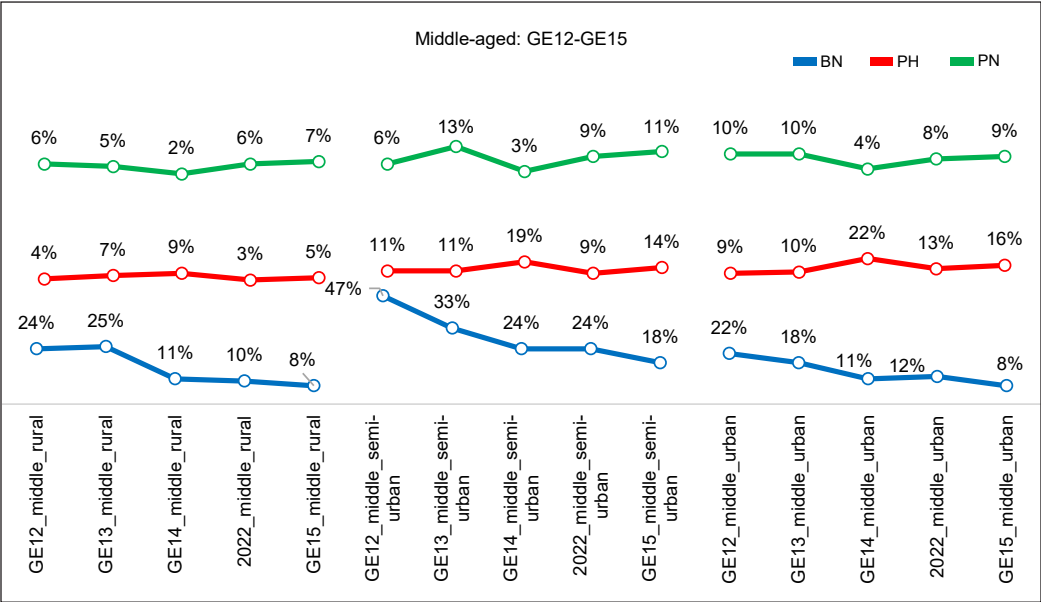
Figure 3. Middle-aged voting patterns by rural-urban: GE12–GE15
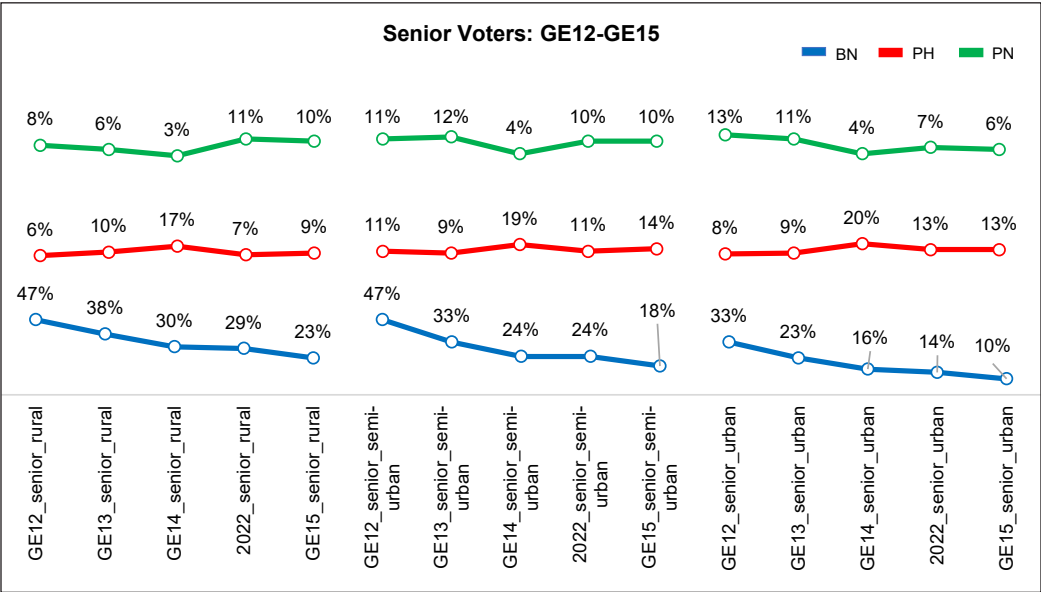
Figure 4. Senior votes voting patterns by rural-urban: GE12–GE15

have allowed the party to secure more seats if the election had coincided with GE15. PH also performed better in semi-urban seats during GE15 than in the state election, with support rising across all three age groups. Notably, youth support for PH increased substantially from 7% in the state election to 15% in GE15 (Figure 2).

In urban seats, PH maintained its established dominance, a trend that has been consistent since the urban electoral shift in GE12 and GE13 (Azlan & Majidillah, 2018; Fernando, 2013). Although PH made limited gains in Johor's urban seats from GE12 to GE13, which are predominantly Chinese and mixed ethnic-majority constituencies, the coalition's success in GE14 can be attributed to its ability to attract support across all age groups, which played a critical role in diminishing BN's dominance in the state election. Unfortunately, PH's support among senior and middle-aged voters has since waned, with its current vote share relying predominantly on youth support (Figure 2).

Popular Vote Based on Age in Ethnic Majority Seats

Based on the data presented in Figures 5 to 7, PH's support among middle-aged voters has shown a notable increase since GE12, particularly in low Malay majority seats, such as those located in semi-urban and urban areas. However, during the state election, low percentages of middle-aged voter support in semi-urban and urban Malay seats were recorded, which may have contributed to PH's losing several key seats to other coalitions. Notable losses include Larkin, Bukit Permai, Kempas, Permas, Mahkota, and Maharani, which were contested and ultimately won by different political alliances in GE14 and GE15. This pattern highlights the difficulty PH faced in consolidating middle-aged voter support in areas with a significant

Malay demographic, potentially limiting its overall electoral performance in these constituencies.

It is well established that senior voters in rural areas, predominantly Malay, tend to support BN, with UMNO enjoying significant popularity (Mohamad, 2015; Saravanamuttu, 2016). However, in Johor, BN saw a dramatic decline in support from this age group, losing over half of its senior voters from GE12 to GE15 (Figure 4). The number of elderly voters supporting BN in rural areas decreased, even in constituencies with a high percentage of Malay voters. With both BN and PH unable to increase their vote totals as in previous elections, the involvement of PN in the recent state election and GE15 likely played a key role in the realignment of senior and middle-aged voters.

The popular vote among young voters in rural-urban seats demonstrates fluctuating support patterns for PH and BN. Four years after the peak of PH's vote in GE14, the percentage of its youth votes in rural regions has remained steady at 12%. Notably, despite facing significant setbacks that impacted its performance in federal elections, BN gained some support among young voters in rural and semi-urban areas between GE14 and GE15. Meanwhile, PN's support dramatically increased, rising from 2% in rural areas to 13% in the state election and GE15 (Figure 4). This rise in support for PN likely influenced PH's vote share during the state election and decreased PH support in semi-urban areas.
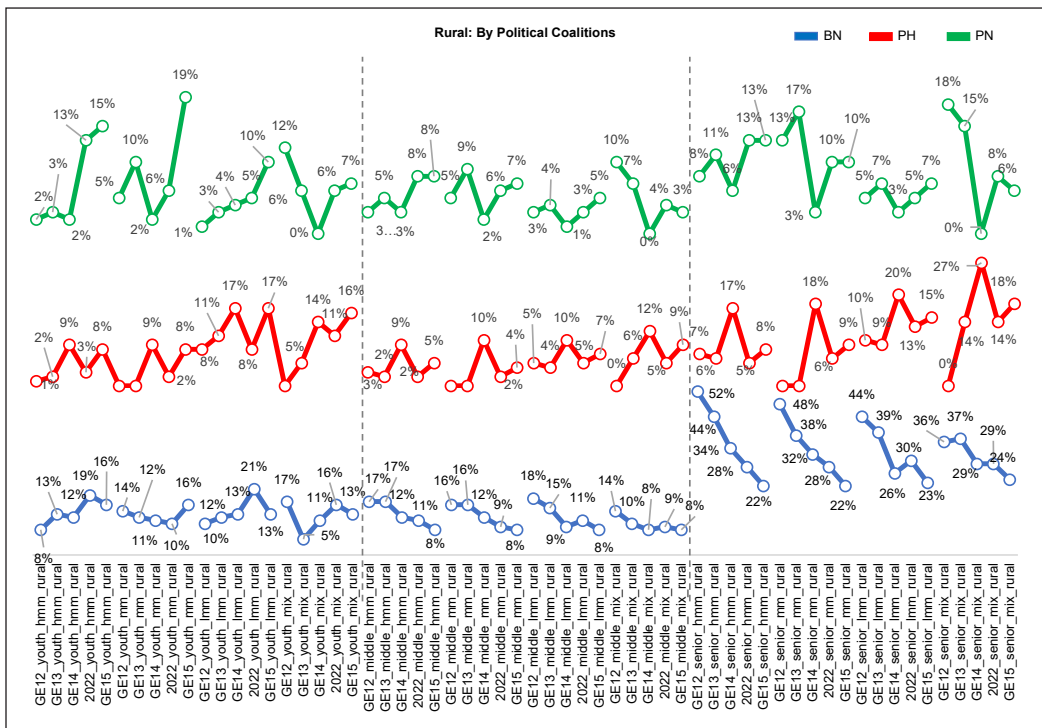
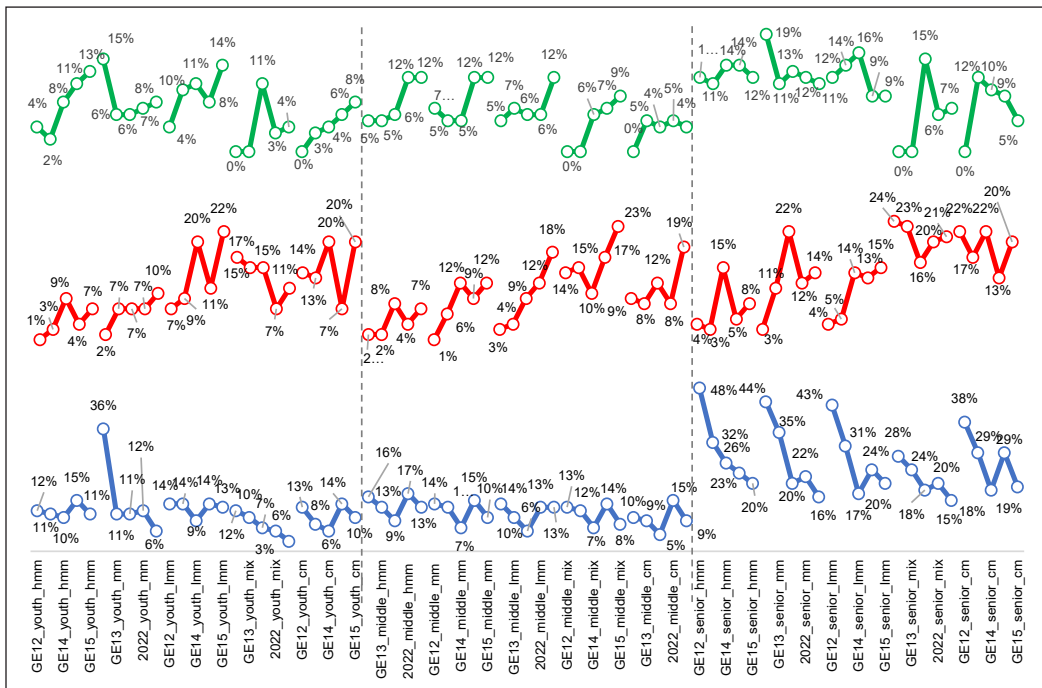*Figure 5*. Rural voting patterns in ethnic majority seats: GE12–GE15

Figure 6. Semi-urban voting patterns in ethnic majority seats: GE12–GE15
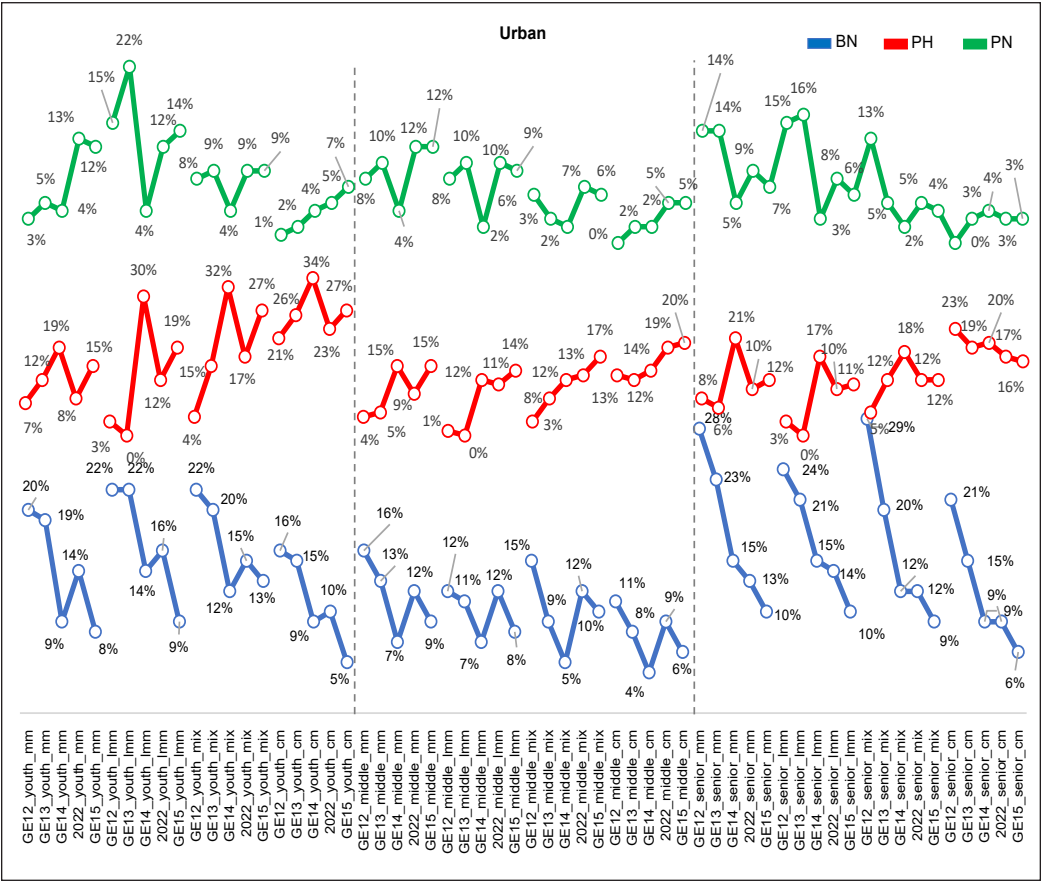
Figure 7. Urban voting patterns in ethnic majority seats: GE12–GE15

DISCUSSION

In the Johor State Election, BN adopted a campaign slogan similar to the one used in the Melaka 15th State Election: *Kestabilan Demi Kemakmuran Untuk Johor* (Stability for Johor's Prosperity), PN tailored its message to the local context with the addition of *Demi Bangsa Johor* (For the Sake of Johoreans). PH used the tagline *Johor Bangkit: Maju, Bermaruah* (Johor Rise: Prosperity and Dignity). The manifesto clash between these two parties reflects the intensifying competition in

Malaysian electoral politics, particularly following PH's ambitious promises in GE14 with their Book of Hope: Building the Nation, Fulfilling Hopes. This approach has led to a greater emphasis on how manifestos influence voter behavior. However, despite this focus, the impact of electoral manifestos on voting patterns in Malaysia remains empirically underexplored. In light of this, we examine three key elements of voter age dynamics in the Johor elections: ethnic composition, the rural-urban continuum, voter turnout, and partisanship.

Ethnic Composition and Rural-urban Seats

Following its loss of Johor to Pakatan Harapan (PH) in the 14th General Election (GE14), Barisan Nasional (BN) regained momentum and formed a stronger state government through the subsequent state election. However, the coalition's declining support in GE15 underscores the volatility of voter preferences. This volatility can be traced back to GE12, which marked a significant shift from Malaysia's traditionally dominant single-party system led by UMNO-BN. Several factors contribute to these changes in Malaysian voting behavior, including the rise of alternative social media (Idid, 2017; Tapsell, 2018), the role of media in democratization (Pepinsky, 2013), BN's failure to address pressing socio-economic issues (Nadzri, 2019), internal leadership conflicts (Welsh, 2016), and corruption scandals (Chin & Huat, 2009; Salleh, 2008).

In terms of the rural-urban continuum, the decline of BN as the dominant coalition in Johor after the GE12-GE14 period is particularly notable. Despite its historical significance in the state, BN's vote share in urban and rural areas and in ethnic-majority seats consistently declined. As illustrated in Table 2, BN's support in urban areas sharply declined, while its backing among middle-aged voters in rural areas remained relatively stable since GE12. However, in the post-GE14 period, BN's support in urban and semi-urban areas experienced further erosion, as shown in Figure 2. In rural constituencies, BN retained the highest level of youth support compared to Perikatan Nasional (PN) and PH, but this support dropped from 23% in the state election to 18% in GE15. Despite various criticisms, BN could still secure youth votes in rural areas, a phenomenon likely influenced by the socialization process or parental voting behavior. These familial ties may help explain BN's continued support in rural constituencies. Furthermore, FELDA voters in rural regions, such as Kota Tinggi and Pengerang, which have large Malay populations (Pakiam, 2018), are often influenced by family voting traditions. The dominance of UMNO's women's wing in these areas, as noted by Rahman (2018), may have also helped BN resist the rising influence of PH and PN.

In contrast, in urban constituencies where the electorate is predominantly Chinese, the BN component party, the Malaysian Chinese Association (MCA), struggled to compete with PH's component parties, particularly the Democratic Action Party (DAP) and Parti Keadilan Rakyat (PKR). Chin (2016) argues that "policies pursued by UMNO, such as the marginalization of non-Malays in education, politics, and the economy, and the increasing Islamization of the civil service, judiciary, and public life" (p. 172) have contributed to MCA's loss of support. Khalid and Loh (2016) contend that the electoral preferences of Chinese voters are also shaped by the influence of the 'Third Force,' or civil society, while Fee and Appudurai (2011) suggest that dissatisfaction with Bumiputera policies and the elitist privileges of UMNO have further eroded support for MCA. These factors

strengthened PH as a political coalition based on vertical ethnic cooperation in the economic, political, and institutional spheres. Furthermore, PH's progressive policies made it the primary choice for non-Malay voters. Despite a reduction in support for PH in GE15 relative to GE12, the coalition managed to avoid a drastic drop in votes across rural, semi-urban, and urban constituencies compared to GE14.

As a conservative, Islamic, Malay-based coalition, Perikatan Nasional (PN) has garnered substantial support in rural and semi-urban constituencies predominantly composed of Malay voters. Figures 5 and 6 illustrate that PN's vote share has increased since GE12, particularly in Malay-majority seats in rural and semi-urban areas. This shift enabled the coalition to secure victories in constituencies such as Maharani, Bukit Pasir, and Endau, with a strong potential for additional gains if the election had been held concurrently with GE15. Additionally, PN succeeded in increasing its support among senior voters in these areas, likely at the expense of Pakatan Harapan (PH), as the reduction in senior voter support for Barisan Nasional (BN) was minimal. Nevertheless, PN continues to face challenges in competing in low-Malay majority, mixed, and Chinese-majority constituencies in semi-urban and urban areas, a trend that has persisted since GE14.

However, an analysis of voting patterns along the rural-urban continuum only accounts for geographical factors influencing voter behavior. To gain deeper insights into the election results, we adopted K. M. Ong's (2023) methodology of examining district-level voting outcomes in GE15 and the state elections to assess party performance comprehensively. By comparing parliamentary and state voting patterns since GE12 (Table 3), we observed that voters tend to align their choices across state and federal elections. The only notable deviation occurred in the 2022 state election and GE15, where divergent voting patterns were observed. This anomaly can be attributed to the different political contexts and timing of the elections, which likely contributed to voter alignment and turnout shifts, ultimately influencing party performance.

Turnout

Voter turnout in the 2018 Johor State Election was 74%, whereas only 59% of eligible voters participated in the 2022 election. An analysis of the rural-urban continuum (Figure 1) reveals that voter turnout was higher in rural areas across all

Table 3
State Vs. Parliamentary results (±%)

Election	GE12	GE13	GE14	GE15
State-Parliament	±1%	±1%	±1%	±7%*

Note. *Comparison of 2022 State Election with GE15

age groups—youth, middle-aged, and senior voters—compared to semi-urban and urban areas during the state elections. However, in the 15th General Election (GE15), the differences in turnout across age groups were minimal.

The 2020 Sabah State Election, held during the COVID-19 pandemic, significantly contributed to the sharp rise in confirmed cases (Lim et al., 2021). This likely heightened public concern regarding the risk of contracting the virus at large in-person gatherings. Consequently, the fear of COVID-19 persisted even as the country transitioned into the endemic phase, deterring many from participating in the electoral process.

Furthermore, since the 14th General Election (GE14), the Election Commission of Malaysia has conducted eight state by-elections, five parliamentary elections, and four state elections, including the Johor State Election. The frequency of elections may have contributed to voter apathy, with some voters perceiving little impact from changes in state elections or by-elections. Therefore, the ongoing fear of COVID-19 and growing voter apathy likely contributed to the low turnout in the Johor State Election.

Young voters, who are generally more geographically mobile, may have contributed to the low turnout during the state election due to factors such as studying or working outside the state. The election timing coincided with the academic schedules of tertiary education institutions, making many students reluctant to return to their hometowns to vote because of impending classes and exams. Additionally, the high transportation costs of traveling back home further discouraged youth participation. Their parents' voting behavior may have influenced some young voters who remained in their hometowns, and many chose not to vote. This aligns with the findings of Zeglovits and Aichholzer (2014), who demonstrated the impact of parental decisions on their children's voting behavior. In contrast to the state election, many voters working in Singapore could not return to vote due to the border closures imposed by the Malaysian government as part of COVID-19 precautionary measures, further contributing to the low turnout (Yusof, 2022).

The reduced voter participation benefited parties with strong partisan support, extensive patronage networks, and deep local social ties, such as UMNO. These loyalists were highly motivated to cast their ballots for UMNO, regardless of the external circumstances. As a result, the election outcome clearly reflected the influence of this loyal base: out of 56 available seats, UMNO secured 40, PH won 13, and PN claimed the remaining three.

Partisan Strength

According to Schoultz's (2017) theory, the development of partisan loyalty within UMNO may experience weakening during times of crisis. This theoretical perspective aligns with Malaysia's current economic challenges and the recent national emergency declaration. Over the 14 years since the 12th General Election (GE12), the nation has

faced several critical events, including the 1Malaysia Development Berhad (1MDB) financial scandal, which implicated the leadership of Barisan Nasional (BN) in corruption allegations, the Sheraton Move, and the outbreak of the COVID-19 pandemic. Pro-Pakatan Harapan (PH) supporters criticized the Sheraton Move as an act of "disloyalty" by BERSATU, which ultimately led to the collapse of the PH government. In the aftermath, Perikatan Nasional (PN)—a coalition comprising parties such as PAS, Parti Pribumi Bersatu Malaysia (PPBM), and Gerakan—emerged as a dominant political force for Malay-Muslim voters, challenging UMNO's traditional dominance.

Ethno-religious issues further escalated during this period, as evidenced by protests surrounding Malaysia's commitment to the International Convention on the Elimination of All Forms of Racial Discrimination (ICERD) and the Rome Statute. These controversies amplified the salience of identity politics. Additionally, debates over Bumiputera rights and privileges were reignited following the Bumiputera Congress organized by the Ministry of Economic Affairs (MEA) in 2018, as well as the formation of Muafakat Nasional (MN), a coalition of Malay political parties.

A significant difference between GE12 and the 15th General Election (GE15) was the noticeable shift in electoral support from BN and PH to PN among young and middle-aged voters. Zhang and Hutchinson (2022) argue that PN has garnered substantial support from young voters, a trend reflected in Figures 2 to 4, which illustrate a marked increase in youth votes for PN at the expense of both BN and PH. Specifically, Malay youth in rural and semi-urban constituencies demonstrated a significant shift toward PN during state elections and GE15. These patterns suggest that the process of partisan alignment, initiated during GE14, has accelerated due to the critical events outlined above. However, this process did not fully manifest during the state elections. Despite the lower voter turnout observed across all age groups and ethnicities, youth participation (despite being a larger demographic cohort compared to older voters) was notably lower than that of middle-aged and senior voters, particularly in urban and semi-urban areas (Figure 1).

The realignment of voters in Malay-majority rural and semi-urban constituencies toward PAS can be attributed to the party's longstanding dualistic approach to political mobilization. According to Farish (2004), PAS employs a combination of bottom-up grassroots engagement and top-down strategies of indoctrination to foster a base of loyal voters and dedicated volunteers. This dual strategy has enabled PAS to establish a committed voter base, a highly organized party machinery, and an extensive networking system across Peninsular Malaysia. The party's seasoned campaigners and effective strategic messaging further bolstered its electoral capacity, compensating for BERSATU's relative deficiency in terms of machinery and volunteer mobilization for large-scale elections.

The dynamics influencing the Johor elections extended beyond the Islamic movement, with the Malay protector narrative playing a significant role. The synergy between PAS's Islamist ethos and BERSATU's advocacy for Malay rights posed a direct challenge to UMNO, which faced widespread criticism during this period. This intersection of Islamism and Malay-centric politics enabled PN to secure three seats in the Johor state elections. The coalition likely could gain additional seats if the state elections had occurred under the political conditions of the post-PH-BN federal government.

Muhyiddin Yassin's leadership during the COVID-19 pandemic further reinforced PN's appeal among Malay-Muslim voters. His prominence as a political figure during this critical period enhanced PN's visibility and credibility. A survey conducted by the Merdeka Center (2020) revealed that Muhyiddin's approval rating was at the highest 69% and that he had support from 9 out of 10 Malays and Bumiputera respondents, which reflects his effective handling of the pandemic and his pivotal role in facilitating the voter alignment process.

A critical question arises whether UMNO could have performed better in the state election if voter turnout had been higher. Voting lanes 1 and 2, which historically contributed significantly to UMNO's support, did not increase turnout or backing for the party (Figures 2 to 4). A significant proportion of young voters in Malay-majority constituencies began shifting their support toward PN before and after the pandemic. This shift may be influenced by various factors, including the strategic use of social media messaging, the political campaigns of PN post-Sheraton Move, Islamist indoctrination, and discontent with UMNO's corruption allegations.

This raises an important question: Why has a party with one of the most established electoral machinery, such as UMNO, struggled to influence young voters effectively? Studies by Mohamad and Zulkifli (2023) on Malay voters in Selangor suggest that the Malay electorate has increasingly distanced itself from UMNO due to the party's perceived inability to address socioeconomic issues and its shortcomings in governance. This trend has been exacerbated by the rise of PN, which has presented itself as a viable alternative for Malay voters. Despite this, UMNO and BN retain nostalgic support from certain segments of the electorate who continue to view the coalition as the traditional protector of the Malay community (Mohamad & Zulkifli, 2023).

Semi-urban constituencies illustrate the significant role of voter turnout, ethnic composition, and partisanship in shaping electoral outcomes. In comparison to rural constituencies—predominantly Malay-majority and dominated by Malay-based coalitions—variations in voter turnout have a relatively smaller impact on party performance in these rural areas. By contrast, semi-urban constituencies exhibit greater sensitivity to fluctuations in turnout, which

has a more pronounced effect on electoral outcomes. Urban constituencies, on the other hand, present a distinct dynamic: Pakatan Harapan (PH) has consistently excelled in these areas due to robust support from non-Malay voters. At the same time, Malay-based parties have yet to secure significant electoral success.

Structurally, the diverse ethnic compositions of semi-urban constituencies, which include four Chinese-majority (CM) seats, four high-Malay-majority (HMM) seats, seven Malay-majority (MM) seats, five low-Malay-majority (LMM) seats, and one mixed seat, make them pivotal in determining overall electoral outcomes. These constituencies allow any coalition or party to form a state government, as winning in semi-urban areas often proves critical. During the 15th General Election (GE15), PH secured 28 seats, 11 of which came from semi-urban constituencies, compared to 12 seats won in the preceding state election. The GE15 state election results suggest that UMNO-BN faces considerable challenges in achieving a comfortable majority to form a state government. This underscores the strategic importance of semi-urban constituencies in electoral calculations and highlights the need for parties to adapt their outreach strategies to these areas' demographic and political diversity. BN's performance in semi-urban constituencies during GE15 indicated that the party won two HMM seats, one LMM seat, and three MM seats but lost all Chinese-majority seats (where it had won two seats in the state election). In the state election, BN received

197,741 votes in semi-urban constituencies, but in GE15, it lost 19,336 votes. This reflects a 15% loss of its traditional support base, particularly among Malay voters, and suggests that the increased turnout in these constituencies during GE15 negatively impacted the party's performance.

An analysis of voting patterns across different age groups in Johor, framed within the context of partisanship theory, reveals several important implications. First, consistent with Dassonneville's (2017) and Converse's (1976) findings, a positive correlation exists between higher voter age and increased voter turnout, as observed in the 2022 Johor State Election. However, during the 15th General Election (GE15), voter turnout appeared relatively uniform across age groups. These findings suggest that voter turnout in Malaysia's electoral system is not determined solely by age but also by factors such as election timing, voter apathy, and geographical location. Furthermore, the decline in senior voter support for Barisan Nasional (BN), Malaysia's oldest political party, underscores the fluidity of partisanship. This shift indicates that voter allegiance can transition to other political parties, either temporarily or permanently. Notably, voter behavior appears to be influenced by economic rationality or psychological ties to a particular party and intrinsic motivations, including ethnic and religious values. These value-rational considerations often take precedence over historical party affiliations, reflecting Malaysia's dynamic and evolving nature of political allegiance.

CONCLUSION

This study identified significant variations in voter age and voting patterns across different demographic settings, which were reflected in distinct electoral outcomes in rural, urban, and ethnically majority constituencies. Notably, youth votes in Johor fluctuated in their support for Barisan Nasional (BN) in rural areas between GE14 and GE15. This trend suggests a unique process of alignment and dealignment that emerged during the political shifts and government changes between 2020 and 2022. The findings also highlighted that lower voter turnout tended to benefit parties with strong, long-term partisan support, such as UMNO-led BN, which relies on a base of loyal voters. Nevertheless, the impact of critical moments and the formation of alternative coalitions significantly reduced BN's vote share across all age categories, a pattern observable in both state elections and GE15.

The dynamics of voting patterns across age groups may become increasingly complex in the future, particularly in light of the recent cooperation between Pakatan Harapan (PH) and the UMNO-led BN. This alliance presents a potential ideological conflict, with UMNO's Malay-centric platform contrasting sharply with PH's multi-ethnic coalition framework. This ideological divergence has enabled Perikatan Nasional (PN) to position itself as the primary opposition, consolidating a substantial share of Malay votes. Moving forward, institutional and policy reforms implemented by any party or coalition to address voters' socio-economic concerns could play a crucial role in shaping voter decisions, particularly during periods of political and economic uncertainty.

However, as this study relied primarily on secondary sources, such as voting streams and general election results, future research could strengthen these findings by incorporating sentiment analysis. Surveys and social media analytics could provide deeper insights into partisanship levels across specific voter categories, including age, education, gender, and income, thereby offering a more nuanced understanding of Malaysia's evolving electoral landscape.

ACKNOWLEDGEMENT

REFERENCES

Azlan, A. A., & Majidillah, K. M. (2008). Urban swing in the 14th General Election: A case study of Negeri Sembilan. *Jebat, Malaysian Journal of History, Politics & Strategic Studies, 45*(2), 251-272.

Azlan, A. A., & Nadzri, M. M. N. (2023). Parliamentary motions under a semi-authoritarian regime: Evidence from Malaysia. *Parliaments, Estates and Representation, 43*(2)*,* 127-148. https://doi.org/10.1080/02606755.2022.2148505

Bartels, L. M. (2002). Beyond the running tally: Partisan bias in political perceptions. *Political Behavior, 24*(2), 117-150. https://doi.org/10.1023/A:1021226224601

Beck, P. A., & Jennings, K. M. (1991). Family traditions, political periods and the development

of partisan orientations. *The Journal of Politics, 53*(3), 742-763. https://doi.org/10.2307/2131578

Bhatti, Y., & Hansen, K. M. (2012). The effect of generation and age on turnout to the European Parliament: How turnout will continue to decline in the future. *Electoral Studies, 31*(2), 269-272. https://doi.org/10.1016/j.electstud.2012.01.003

Case, W. (1993). Semi-democracy in Malaysia: Withstanding the pressures for regime change. *Pacific Affairs, 66*(2), 183-205. https://doi.org/10.2307/2759366

Center for Information & Research on Civic Learning and Engagement. (2018, November 7). *Election night 2018: Historically high youth turnout, support for democrats.* Tufts University. https://circle.tufts.edu/latest-research/election-night-2018-historically-high-youth-turnout-support-democrats

Chin, J. (2016). From ketuanan Melayu to ketuanan Islam: UMNO and the Malaysian Chinese. In B. Welsh (Ed.), *The end of UMNO: Essays on Malaysia's dominant party* (pp. 171-212). Strategic Information and Research Development Centre.

Chin, J., & Huat, W. C. (2009). Malaysia's electoral upheaval. *Journal of Democracy, 20*(3), 71-85. https://doi.org/10.1080/00358533.2020.1741882

Converse, E. P. (1969). Of time and partisan stability. *Comparative Political Studies, 2*(2), 139-171. https://doi.org/10.1177/001041406900200201

Converse, E. P. (1976). *Dynamics of party support: Cohort analytical party identification*. Sage Publications.

Dalton, R. J. (2002). Cognitive mobilization and partisan dealignment. In *Citizen politics: Public opinion and political parties in advanced industrial democracies* (pp. 264-284). Chatham House Publishers.

Dassonneville, R. (2017). Age and voting. In K. Arzheimer, J. Evans, & M. S. Lewis-Beck (Eds.), *The SAGE handbook of electoral behavior (pp. 137-158)*. SAGE Publications Ltd.

Dettman, S., & Pepinsky, T. B. (2023). Demographic structure and voting behaviour during democratization: Evidence from Malaysia's 2022 election. *Democratization, 31*(1), 1-22. https://doi.org/10.1080/13510347.2023.2254707

Dinas, E. (2017). The acquisition of voting habits. In J. Fisher, E. Fieldhouse, M. N. Franklin, R. Gibson, M. Cantijoch, & C. Wlezien (Eds.), *The Routledge handbook of elections, voting behavior and public opinion* (pp. 108-119). Routledge.

Election Commission of Malaysia. (2018). *Keputusan Pilihan Raya Ke-14* [14th General Election Results.]. Retrieved August 19, 2023, from https://mysprsemak.spr.gov.my/semakan/keputusan/pru

Election Commission of Malaysia. (2022a). *Keputusan Pilihan Raya Ke-15* [15th General Election Results.]. Retrieved August 19, 2023, from https://mysprsemak.spr.gov.my/semakan/keputusan/pru

Election Commission of Malaysia. (2022b). *Pilihan Raya Umum DUN. PRU Dewan Negeri Johor* [State Assembly General Election. Johor State Assembly General Election]. Retrieved August 15, 2023, from https://mysprsemak.spr.gov.my/semakan/keputusan/pru-dun

Evans, G., & Tilley, J. (2017) *The new politics of class: The political exclusion of the British working class*. Oxford University Press.

Farish, A. N. (2004). *Islam embedded: The historical development of the Pan-Malaysian Islamic Party PAS, 1951-2003* (Vol. 1). Malaysian Sociological Research Institute.

Fee, L. K., & Appudurai, J. (2011). Race, class and politics in peninsular Malaysia: The General Election of 2008. *Asian Studies Review, 35*(1),

6-82. https://doi.org/10.1080/10357823.2011.552706

Fernando, J. M. (2013). The urban drift in Kuala Lumpur in the 2008 general election: A return to the old ways? *Malaysian Journal of Democracy and Election Studies, 1*(1), 24-41.

Goerres, A. (2008). The grey vote: Determinants of older voters' party choice in Britain and West Germany. *Electoral Studies, 27*(2), 285-304. https://doi.org/10.1016/j.electstud.2007.12.007

Gomez, E. T., & Jomo, K. S. (1997). *Malaysia's political economy: Politics, patronage, and profits*. Cambridge University Press.

Green, D. P., Palmquist, B., & Schickler, E. (2002). *Partisan hearts and minds: Political parties and the social identities of voters*. Yale University Press.

Hed, M. N., & Grasso, M. T. (2020). Age group differences in political activism in Malaysia. *Journal of Youth Studies, 23*(6), 765-779. https://doi.org/10.1080/13676261.2019.1636948

Horowitz, D. L. (1989). Cause and consequence in public policy theory: Ethnic policy and system transformation in Malaysia. *Policy Sciences, 22*, 249-287 https://doi.org/10.1007/BF00136321

Hutchinson, F. E., & Zhang, K. (2022). *A granular analysis of the 2022 Johor state polls: Implications for Malaysia's impending general election. ISEAS Perspective, (2022), Article 104.*

Idid, S. A. (2017). Agenda setting: Probing the issues during the 13th General Election. *Jurnal Komunikasi Malaysian Journal of Communication, 33*(2), 1-12.

Johor State Constitution. (1895 amend. 2008). Laws of the state of Johor: The law of the constitution 1895. https://dewannegeri.johor.gov.my/wp-content/uploads/2022/03/Undang-Undang-Tubuh-Restricted-English-1.pdf

Khalid, K. M., & Loh, J. (2016). Contemporary electoral trends among Malaysian Chinese voters: Changing political socialisation and orientation in the post 2008 General Election. *European Journal of East Asian Studies, 15*(2), 174-208. https://doi.org/10.1163/15700615-01502007

Khor, Y. L. (2015). The political economy of FELDA seats: UMNO's Malay rural fortress in GE13. In J. Saravanamuttu, H. G. Lee, & M. N. M. Osman (Eds.), *Coalitions in collisions: Malaysia 13th general elections* (pp. 91-122). Strategic Information and Research Development Centre.

Khor, Y. L., & Chia, J. (2020). FELDA and rural voting patterns in GE14 – A wake-up call. *The Round Table*, *109*(2), 126-154. https://doi.org/10.1080/00358533.2020.1741882

Konzelmann, L., Wagner, C., & Rattinger, H. (2012). Turnout in Germany in the course of time: Life cycle and cohort effects on electoral turnout from 1953 to 2049. *Electoral Studies, 31*(2), 250-261.

Lim, J. T., Maung, K., Tan, S. T., Ong, S. E., Lim, J. M., Koo, J. R., Sun, H., Park, M., Tan, K. W., Yoong, J., Cook, A. R., & Dickens, B. S. L. (2021). Estimating direct and spill-over impacts of political elections on COVID-19 transmission using synthetic control methods. *PLOS Computational Biology, 17*(5), 1-15. https://doi.org/10.1371/journal.pcbi.1008959

Liow, J., (2011). Creating cadres: Mobilization, activism and the youth wing of the Pan-Malaysian Islamic Party. *Pacific Affairs, 84*(4), 665-686. https://doi.org/10.5509/2011844665

Merdeka Center. (2020, September 2). *In latest survey, Muhyiddin gets thumbs-up from 69pc Malaysians*. https://merdeka.org/in-latest-survey-muhyiddin-gets-thumbs-up-from-69pc-malaysians/

Mohamad, M. (2015). Fragmented but captured: Malay voters and the FELDA factor in GE13. In J. Saravanamuttu, H. G. Lee, & M. N. M. Osman (Eds.), *Coalitions in collisions: Malaysia 13th General Elections* (pp. 123-

153). Strategic Information and Research Development Centre.

Mohamad, M., & Suffian, I. (2023). Malaysia's 15th general election: Ethnicity remains the key factor in voter preferences. *ISEAS Perspective, (2023), Article 20.*

Mohamad, M., & Zulkifli, K. S. (2023). Why Perikatan Nasional may win in Selangor. *ISEAS Perspective, (2023), Article 50.*

Nadzri, M. M. N. (2019). The 14th General Election, the fall of Barisan Nasional, and political development in Malaysia, 1957-2018. *Journal of Current Southeast Asian Affairs, 37*(3), 139-171. https://doi.org/10.1177/186810341803700307

Ng, J. W. J., Rangel, G. J., & Phung, Y. C. (2020). Malaysia's 14th General Election: dissecting the 'Malaysian tsunami'—measuring the impacts of ethnicity and urban development on electoral outcomes. *Asian Journal of Political Science, 29*(1), 42-66. https://doi.org/10.1080/0218537 7.2020.1814363

Noh, M. F. (2022, January 22). PRN Johor perlu diadakan kerana kedudukan kerajaan negeri rapuh [Johor state election needs to be held due to fragile state government]. *Berita Harian.* https://www.bharian.com.my/berita/nasional/2022/01/914514/prn-johor-perlu-diadakan-kerana-kedudukan-kerajaan-negeri-rapuh

Ong, E. (2020). Urban versus rural voters in Malaysia: More similarities than differences. *Contemporary Southeast Asia: A Journal of International and Strategic Affairs, 42*(1), 28-57.

Ong, K. M. (2023). Malaysia's 2023 state elections (Part 1): Projections and scenarios. *ISEAS Perspective, (2023), Article 52. https://doi.org/10.1355/cs42-1b*

Ostwald, K., & Subhan, M. S. (2021). Regional identity formation in Malaysia: Primacy of the political center and its essentialized ethnic identities. *Asian Politics & Policy, 13,* 37-55. https://doi.org/10.1111/aspp.12565

Pakiam, G. K. (2018). *Voting behaviour in FELDA parliamentary constituencies since 2004. ISEAS Perspective,* (2023), Article 26.

Peisakhin, L. (2012). *In history's shadow: Persistence of identities and contemporary political* behavior (Working Paper 2012/272 Instituto Juan March de Estudios e Investigaciones). Centro de Estudios Avanzados en Ciencias Sociales.

Pepinsky, T. B. (2013). The new media and Malaysian politics in historical politics. *Contemporary Southeast Asia Journal of International and Strategic Affairs, 35*(1), 83-110.

Rahman, S. (2018). Was it a Malay tsunami? Deconstructing the Malay vote in Malaysia's 2018 Election. *The Round Table, 107*(6), 669-682. https://doi.org/10.1080/00358533.2018.1545941

Salleh, N. M. (2008). Pilihan Raya Umum Ke-12 (PRU-12): "Tsunami" politik Melayu? [The 12th General Election (GE-12): A Malay Political "Tsunami"?]. *Jebat: Malaysian Journal of History, Politics and Strategic Studies, 35,* 49-64.

Saravanamuttu, J. (2016). Power-sharing politics and the electoral impasse in the GE13. In J. Saravanamuttu, H. G. Lee, & M. N. M. Osman (Eds.), *Coalitions in collisions: Malaysia 13th general elections* (pp. 37-62). Strategic Information and Research Development Centre.

Schoultz, A. V. (2017). Party systems and voter alignments. In K. Arzheimer, J. Evans, & M. S. Lewis-Beck (Eds.), *The SAGE handbook of electoral behavior (pp. 30-57).* SAGE Publications Ltd.

Sloam, J., & Henn, M. (2019). *Youthquake: The rise of young cosmopolitans*. Palgrave Pivot.

Tapsell, R. (2018). New media, old rule in Malaysia. In G. Lopez & B. Welsh (Eds.), *Regime resilience in Malaysia and Singapore* (pp. 129-143). Strategic Information and Research Development Centre.

Tilley, J. R. (2005). Research note: Libertarian-authoritarian value change in Britain, 1974–2001. *Political Studies, 53*(2), 442-453. https://doi.org/10.1111/j.1467-9248.2005.005

Tindak Malaysia. (n.d.). *Johor election site*. https://www.tindakmalaysia.org/home/johor-election-site

Ting, S.-H., & Ahmad, S. S. W. (2021): Everyday interactions and political participation of Malaysian youth. *Journal of Youth Studies 25*(5) 616-635. https://doi.org/10.1080/13676261.2021.1923672

Vasil, R. K. (1980). *Ethnic politics in Malaysia*. Radiant Publication.

Waikar, P. (2020). Generational divide: How Pakatan Harapan swung the youth vote in GE14. *The Round Table*, *109*(2), 155-172 https://doi.org/10.1080/00358533.2020.1741883

Welsh, B. (Ed.). (2016). *The end of UMNO: Essays on Malaysia's dominant party*. Strategic Information and Research Development Centre.

Welsh, B. (2018). "Saviour" politics and Malaysia's 2018 electoral democratic breakthrough: Rethinking explanatory narratives and implications. *Journal of Current Southeast Asian Affairs, 37*(3), 85-108. https://doi.org/10.1177/186810341803700305

Wong, C. H. (2018). The rise, resilience and demise of Malaysia's dominant coalition. *The Round Table, 107*(6), 755-769. https://doi.org/10.1080/00358533.2018.1545942

Yusof, A. (2022, February 18). *For the first time, postal voting an option for Johoreans in Singapore but some are uncertain.* Channel News Asia. https://www.channelnewsasia.com/asia/malaysia-johor-state-election-postal-voting-singapore-2505816

Zeglovits, E., & Aichholzer, J. (2014). Are people more inclined to vote at 16 than at 18? evidence for the first-time voting boost among 16- to 25-year-olds in Austria. *Journal of Elections, Public Opinion and Parties, 24*(3), 351-361. https://doi.org/10.1080/17457289.2013.872652

Zhang, K., & Hutchinson, F. E. (2022). The Johor vote: The impact of ethnicity, turnout, and age on voter preferences. *ISEAS Perspective, (2022), Article 114.*

SOCIAL SCIENCES & HUMANITIES

A Study on the Use of Creative Comics and Cartoons in a Social Studies Course: A Mixed Methods Research Design

Münevver Yildirim* and Ufuk Şimşek

Department of Turkish and Social Sciences Education, Faculty of Education, University of Atatürk, 25030 Erzurum, Republic of Turkiye

ABSTRACT

The study investigates the impact of engaging creative comics and cartoons in social studies courses on the students' academic achievement and identifies the students' views in this regard. In accordance with the purpose of the study, the embedded design—one of the mixed methods research designs—was employed. The study sample consisted of 91 students in three different classrooms studying in the 5th grade of a secondary school affiliated with the Directorate of National Education in Erzurum, Türkiye, in the 2022/23 academic year. The academic achievement test developed by the researcher was used to reveal the impact of materials consisting of creative comics and cartoons on students' academic achievement. In addition to that, a focus group interview was conducted with the students in the experimental groups to reveal their views about the use of creative comics and cartoons. The quantitative data were analysed with SPSS 26.0 software, whereas the qualitative data were analysed with content analysis. The results of the study showed a statistical significance in favour of the experimental groups with respect to the average scores in the post-test, while there was no such statistical significance between the experimental groups in which either creative comics or cartoons were used. All the other data considered together suggested that the students who participated in the focus group interview liked the given materials and expressed positive views.

Keywords: Academic achievement, cartoons, creative comics, social studies, student views

INTRODUCTION

Determining the appropriate course content and including it in the school curriculum has become a significantly challenging task in today's information-intensive world. In a world with too many events and too much information, students' efforts to access the very information that is meaningful and important for society and themselves

may end up confusing. Nowadays, the teaching content no longer consists of mere information, as in encyclopaedias. However, it contributes to students' ability to interpret, relate to and decide what is meaningful in all kinds of real-life situations (Köksal, 2019). In order to improve communication in the learning process and to create an educationally rich environment, tools, equipment, and materials have been widely utilised. Well-designed teaching materials improve communication, enrich the teaching process, and ensure effective and permanent learning (Dirik, 2015). Moreover, the level of students' recall of what they have learnt, the number of senses used, and their active experiences increase depending on the materials used in the lesson (Tan, 2019). Teaching methods, materials and activities appropriate to the intended learning outcomes (ILOs), course content and student level can be used in classrooms where effective teaching is targeted. Two such teaching materials are creative comics and cartoons.

Creative comics represent a harmonious combination of creative writing and comics (M. Şentürk, 2022). David Kunzle (1973) defined comics as a series of separate images that tell a moral and contemporary story in a mass environment, reflecting the superiority of image over text, and creative writing as the transcription of information collected as a result of observations in different ways from other people. Students tend to express their creative thoughts through genres such as fairy tales, poems, and cartoons (Kaya, 2013).

With the use of creative writing and comics, it can be ensured that students acquire ILOs, permanent learning is achieved, and students' academic achievement increases (Chamisijatin et al., 2020; Çetinkaya, 2015; Göçen, 2018; Hermita et al., 2020; İlhan & Oruç, 2019; Maryani & Amalia, 2018; Lin & Lin, 2016; Özdemir & Çevik, 2018; Suryatin & Sugiman, 2019; Ö. Ç. Şentürk, 2020; Tok et al., 2014; Topkaya, 2016) that their attitudes are positively affected (Arı et al., 2019; Babayigit, 2019; Göçen, 2018; Gürsoy & Göçer, 2021; Kırmızı & Beydemir, 2012; Orçan, 2013; Topkaya & Şimşek, 2015; Veyis & Kolikpınar, 2021), and that students can learn at their own pace (M. Şentürk & Şimşek, 2022). Research also shows that comics improve students' creative thinking and learning abilities (Putra & Iqbal, 2014) and that creative comics enrich the learning environment (Senturk & Senturk, 2023). The use of creative writing and comics in the teaching process (Çetinkaya, 2015; Matuk et al., 2021; Selong et al., 2021) has been shown to exert many positive effects. What also draws attention among humour tools are cartoons, which serve positive purposes and are used as learning materials. A humorous picture or depiction of some aspects of an event, person or thing exaggerated and made ridiculous is called a caricature (Oruç, 2006). In other words, caricatures are works of art that distort or exaggerate the characteristics of a person or a group of people to create an easily identifiable visual resemblance (Kleeman, 2006).

Being divided into three categories in terms of reflecting philosophical problems,

containing nonverbal humour and criticising the social structure of society, cartoons (Kazanevsky, 2005) are highly likely to contribute to students when used as teaching materials. Research has shown that the use of cartoons increases students' academic achievement (Akbaş & Toros, 2016; Akengin & İbrahimoğlu, 2010; Alkan, 2010; Çakır & Aydoğdu, 2016; Durmaz, 2007; Et & Dilber, 2022; Güngör, 2018; Koçoğlu, 2016; Özşahin, 2009; Tokcan & Alkan, 2013; Topcubaşı & Polat, 2014), positively affects students' attitude (Akkaya, 2011; Koçoğlu, 2016), improves their imagination (Kleeman, 2006), makes lessons fun, provides better learning (Akbaş & Toros, 2016; Çiçek, 2011; Özşahin, 2009), improves students' problem-solving skills (Göksu & Köksal, 2016), attracts students' attention as an effective motivational tool (Akbaş & Toros, 2016; Barut & Akbaba, 2017; Durmaz, 2007; Kleeman, 2006). Research also reveals that cartoons and comics have many benefits, and creative comics are still very new in the field. Besides, unlike other studies, no study has been found in which creative comics were examined together with cartoons. In this context, this study is expected to contribute to the related literature as the first study in which cartoon and creative comics materials are compared.

This study aims to investigate the effect of using cartoons and creative comics in a social studies course on students' academic achievement and to reveal students' views about such materials. Therefore, the problem statement of this study is "Does the use of creative comics and cartoons for the instruction of the 5th Grade Social Studies course unit, 'Science, Technology and Society,' impact students' academic achievement?"

For this purpose, answers were sought to the following sub-problem statements:

1. Does the use of cartoons and creative comics as learning materials in a social studies course significantly impact students' academic achievement?

2. Is there a statistical significance in the mean academic achievement scores obtained in the course unit, "Science, Technology and Society," by the sample groups of students for whom creative comics and cartoons were used?

3. What are the students' views on the use of cartoons and creative comics in the social studies course?

Study Limitations

The study was limited to 91 5th-grade students studying in a school affiliated with the Ministry of National Education in the Palandöken District of Erzurum Province in the 2022–2023 academic year, the learning area of "Science, Technology and Society," and 16 experimental group students who participated in the focus group interview. The study is limited to the academic achievement test, interview questions, materials prepared by the researcher and the findings obtained as a result of applying these materials.

METHODS

This study employed the embedded mixed methods design, in which qualitative and quantitative data were brought together, and the data obtained were analysed. The person conducting the study can add a qualitative part to a quantitative part, such as an experimental study, or a quantitative part to a qualitative part, such as a case study. A supporting phase is added to the study to develop the general design (Creswell & Clark, 2011/2018). When the data collected from the qualitative section are considered supporting elements, the qualitative section is embedded in the quantitative section (Creswell et al., 2009).

The quantitative part of the study included a quasi-experimental design with pre-test and post-test control groups. In this model, which is widely used in education-related research, the researcher uses the existing groups since it is not possible to randomly assign students (McMillan & Schumacher, 2014). This design is composed of unbiased control and experimental groups. Measurements are made in sample groups before and after the experiment under equal conditions (Karasar, 2017).

Study Sample

The study sample in the experimental part was conducted with 91 5th grade students studying in three different classrooms of a secondary school affiliated with the Ministry of National Education in Erzurum, Türkiye, in the 2022/23 academic year. Two classrooms were designated as the experimental group and one class as the control group (CG). For the purpose of teaching the content in the course unit, "Science, Technology and Society," one group (n=31) was instructed with creative comics, whereas the other one was instructed with cartoons (n=31); the control group (n=30) was instructed with the current curriculum. The convenience sampling method, which aims to prevent loss of time and labour force (Büyüköztürk et al., 2014), was used to choose the schools in the study.

The qualitative part of the study involved focus group interviews with 16 students from the experimental groups with creative comics as a learning material and 16 other students with whom cartoons were used for a similar purpose. Maximum variation sampling was used to identify the students for the focus group interview. This sampling method examines it in detail to reveal similar and different aspects of various situations involving the research problem (Bilici, 2019).

Data Collection Tools

In the experimental part of the study, the "Science, Technology and Society Academic Achievement Test" developed by the researcher was used as a data collection tool. In contrast, in the qualitative dimension, a focus group interview was conducted to collect ideas from the students in the experimental groups.

Science, Technology and Society Academic Achievement Test

The "Science, Technology and Society Academic Achievement Test" was prepared

by the researcher to investigate the impact of the use of cartoons and creative comics in the social studies course on students' academic achievement and to reveal students' views on these activities. While preparing for the academic achievement test, the ILOs in the 5th grade course unit, "Science, Technology and Society," were considered. The cognitive levels of the questions in Bloom's taxonomy were determined after the opinions of three academic field experts were taken, upon which the appropriate specification table was prepared.

The 30-question academic achievement test prepared for the course unit "Science, Technology and Society" was administered to 88 6th grade students who had previously studied this subject and were deemed to have sufficient knowledge of the said unit. Each student in the pilot activity was asked to answer all questions to avoid data loss. The data collected after the pilot activity were analysed using the Test Analysis Program (TAP), and the item difficulty index, item discrimination index, and KR-20 reliability coefficient of the test were calculated.

Focus Group Interviews

Following the instruction through creative comics and cartoons in the experimental groups, a focus group interview was conducted with the interview questions prepared by the researcher to collect the students' views about the relevant activities. Some situations that may not come to mind in individual interviews may come to mind in group interviews within the framework of other individuals'

explanations, and additional comments may be made. In addition, if it is thought that the data to be collected will be richer, it is useful to conduct a focus group interview (Yıldırım & Şimşek, 2016). In this context, conducting focus group interviews in this study was found appropriate. The focus group interview, which constitutes the qualitative dimension of the study, can be defined as a carefully planned discussion in an environment where individuals can freely express their ideas (Krueger, 1994). The researcher asked four questions to the students instructed through creative comics and those instructed with cartoons about the related activities and collected the students' views. During the interviews, a voice recorder was placed on both sides of the table where the students in the group were sitting to prevent data loss.

It may be difficult for the researcher to take notes in focus group interviews and manage the discussion simultaneously. It is, therefore, considered useful to have a backup voice recorder to fully record the sounds in the environment (Glesne, 1992/2015). The questions used in the interviews were examined by three field experts, after which they were piloted with two students. Following the post-test for academic achievement, the interviews with 16 students lasted approximately one hour. In pilot studies for focus group interviews, according to Yıldırım and Şimşek (2016), researchers have the opportunity to try out the environment where the study will be conducted as well as the materials such as recording devices. The pilot activity

conducted for this study is of significant importance in terms of validity and reliability.

Process and Execution

The ethics committee permission required for the study was obtained from the Social and Human Sciences Ethics Committee at Atatürk University. Before conducting the activities in the study, creative comics and cartoon materials were prepared according to the ILOs of the current social studies curriculum. The researcher prepared all the learning materials using the website named "Storyboard That." Next, the social studies teacher working at the school where the study would be carried out was informed about the relevant materials. The sample groups were randomly selected from the classes available in the school; the experimental and control groups were administered pre-tests before initiating the course unit. Before the learning materials were used in the experimental groups, the students were informed about them.

With the start of the instruction in the pre-determined course unit, the lessons were taught with creative comics in relation to each ILO in one group and with cartoons in the other. The control group, however, was instructed with the current curriculum. All participants were finally administered the academic achievement post-tests. In this context, the quantitative process of the study is shown in Figure 1.

Following the activities and the post-tests, a focus group interview was conducted with 16 students selected from the groups. After the data collection, quantitative and qualitative sections were analysed, and the results are presented in the Results section.

Data Analysis

The data obtained for the quantitative part of this study were analysed using SPSS 26.0 software. A normality test was performed to control the data distribution and compare the academic achievement tests of the students in the study sample. Generally speaking,
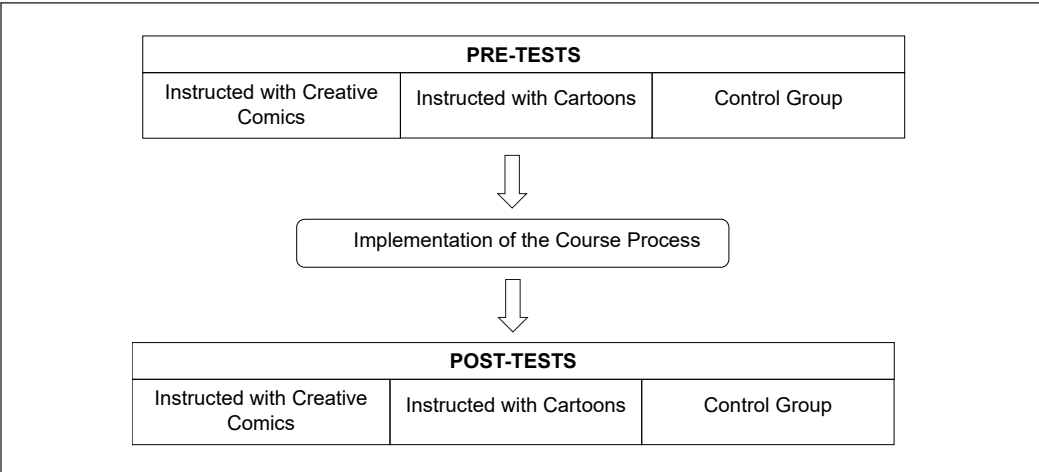
Figure 1. Quantitative process of the study

the Kolmogorov-Smirnov normality test is recommended for normality values when n is 30 and above (Ak, 2008). In terms of skewness and kurtosis, the values of the data were between +1.5 and -1.5 and comply with normal distribution values (Tabachnick & Fidell, 2015). The statistical significance level was determined as 0.05.

In the qualitative part of the study, a focus group interview was conducted with 16 participants, and the data collected was evaluated through content analysis. In this context, the data collected by the researcher were read several times and saved on the computer. Gathering similar data around certain concepts and themes (categories) and organising and interpreting these data in a way that can be understood is called content analysis (Yıldırım & Şimşek, 2016). Both interviews lasted 1 hour, two voice recorders were used to prevent data loss, and the data obtained were transcribed after the interview. They were then read several times, coded and categorised under appropriate headings. Taking voice recordings in focus group interviews, keeping the necessary notes for the accuracy of the data, and giving the data received from the participants as they are without any additions increase the reliability. In this context, attention was paid to these issues, and participant approval was obtained to increase the reliability of the study (Büyüköztürk et al., 2014).

The participants were given names from S1 to S16 to support the tabulated data by direct student views. When the students expressed more than one view, they were taken into consideration numerically, not by considering the number of students, to show the frequencies for the questions.

RESULTS

The academic achievement test, used as a data collection tool, was administered to the control and experimental groups as a pre-test and post-test.

Pre-test Results on the Impact of Using Creative Comics and Cartoons on Students' Academic Achievement

The participants were administered an academic achievement pre-test related to the "Science, Technology and Society" course unit to reveal the impact of using cartoons and creative comics in social studies courses on students' academic achievement. A one-way ANOVA test was conducted to reveal whether there was a difference in terms of pre-test scores between the groups. Before the ANOVA test, the descriptive statistical values of the groups should be stated.

Table 1
Descriptive values based on science, technology and society academic achievement pre-test results

Groups	n	$\bar{X}$	SD
Instructed with creative comics	31	47.258	21.673
Instructed with cartoons	30	59.166	21.857
Control group	30	50.833	22.783

The One-way ANOVA test was used to determine whether there was any statistical significance between the average scores provided in Table 1 and the results shown in Table 2.

Table 2 shows the one-way ANOVA test results, which indicate no statistical significance between the mean academic achievement scores of the groups ($F_{(2.88)}$ =2.319, p=0.104, p>0.05). The academic achievement values between the groups seemed close to each other before the activities.

Post-test Results on the Impact of Using Creative Comics and Cartoons on Students' Academic Achievement

The teaching process based on creative comics and cartoons was completed in the experimental groups, and the teaching process based on the current curriculum was finalised in the control group. Afterwards, the "Science, Technology and Society" academic achievement test was administered as a post-test to reveal whether the groups presented any difference in post-test scores. The whole process consisted of six weeks, with the pre-test and post-test. A one-way ANOVA test was used to determine any difference between the experimental and control groups in terms of post-test scores. Before the ANOVA test, the descriptive statistics values of the groups should be specified.

Table 4 shows the results of the One-way ANOVA test used to determine whether there was a statistically significant difference between the average scores of the groups, as presented in Table 3.

As can be seen in the one-way ANOVA test results in Table 4, there was a significant difference between the mean academic

Table 2

Science, technology and society academic achievement pre-test ANOVA results

Groups	Sum of Squares	SD	Mean of Squares	F	p
Inter-groups	2266.764	2	1133.382	2.319	0.104
Intra-groups	43000.269	88	488.639		
Total	45267.033	90			

Table 3

Descriptive values according to science, technology and society academic achievement post-test results

Groups	n	$\bar{X}$	SD
Instructed with creative comics	31	74.354	16.316
Instructed with cartoons	30	75.500	15.105
Control group	30	62.166	16.799

Table 4

Science, technology and society academic achievement post-test ANOVA results

Groups	Sum of squares	SD	Mean of squares	F	*p*
Inter-groups	3289.808	2	1644.904	6.352	0.003
Intra-groups	22788.763	88	258.963		
Total	26078.571	90			

achievement scores of the groups ($F_{(2.98)}$ =6.352, p=0.003, $p<0.05$). Post-Hoc Tukey's test was performed to identify in favour of which group the difference existed, considering the groups instructed with creative comics, those instructed with cartoons, and the control group. The results are given in Table 5.

As shown in Table 5, there is a significant difference between the academic achievement post-test group scores (creative comics ($\bar{X}$=74.354), cartoons ($\bar{X}$=75.500), CG ($\bar{X}$= 62.166)). A significant difference was found in favour of those instructed with creative comics and cartoons compared to the control group, with no significant difference between the creative comics and cartoons. The results of the one-way ANOVA test determine whether the means compared are significantly different, though no information about the magnitude of this difference is provided. Therefore, the effect size value should be known together with the statistical significance. The eta-squared (n^2) in one-way ANOVA is an association module defined as effect size (Can, 2017).

The effect size value (eta-squared) of this study was calculated as n^2=0.13. The eta-squared (n^2) values can be interpreted as small=0.01, medium=0.06 and large=0.14 effect sizes (Green & Salkind, 2005). The eta-squared (n^2) value has a medium effect size in this study.

Results Regarding Student Views on Creative Comics and Cartoons

Qualitative data were collected through interviews with 16 students, eight of whom were instructed with creative comics and eight with cartoons. The data were subjected to content analysis, presented in tables and supported by direct quotations from student views. Table 6 illustrates the interview questions and the theme represented.

Results of the Focus Group Interviews on Creative Comics

Benefits of Using Creative Comics

In the first question, the students were asked whether the use of creative comics in the social studies course contributed to their learning. All participants stated that the use of creative comics contributed to their learning, as shown in Table 7.

As seen in Table 7, seven of the participants stated that their imagination

Table 5

Science, technology and society academic achievement post-test Tukey's test results

Groups	Groups Compared	Difference Between Means	Standard Error	*p*
Instructed with creative comics	Instructed with cartoons	-1.145	4.121	0.958
	CG	12.188*	4.121	0.011
Instructed with cartoons	Instructed with creative comics	1.145	4.121	0.958
	CG	13.333*	4.155	0.005
Control group	Instructed with creative comics	-12.188*	4.121	0.011
	Instructed with cartoons	-13.333*	4.155	0.005

Table 6
Interview questions and themes

Interview Questions	Themes
1) Are there any benefits of using creative comics in a social studies course? If yes, what are they?	- Benefits of creative comics
2) Are there any benefits of using cartoons in a social studies course? If yes, what are they?	- Benefits of cartoons
3) Are there any negative aspects of using creative comics in a social studies course? If yes, what are they?	- Negative aspects of creative comics - Negative aspects of cartoons
4) Does the use of creative comics in a social studies course impact students' academic achievement?	- The impact of using creative comics on academic achievement
5) Does the use of cartoons in a social studies course impact students' academic achievement?	- The impact of using cartoons on academic achievement
6) Does the use of creative comics in a social studies course impact students' attitudes?	- The impact of using creative comics on students' attitude
7) Does the use of cartoons in a social studies course impact students' attitudes?	- The impact of using cartoons on students' attitude

Table 7
Benefits of using creative comics

Expressions	f
Develops students' imagination	7
Enables a better understanding of the course content	5
Improves students' writing habits	2
Enables students to test themselves	1
Allows students to generate ideas	1
Enriches the course with visuals	1

improved due to creative comics, and five stated that the course content was much better understood by such activities. S2 said,

> *"I think they help us develop our imagination and make us understand the content better. For example, there were very good activities about science and media literacy... I learnt things I had not learnt before. I realised that my imagination developed faster. There were more positive things about them."*

S3 said, *"They helped us understand the subject matter better and realise whether or not we understood it, as well as developing our imagination"*. S7 said,

> *"It improved my comprehension. It helped me understand the lesson better when shown with colours and visuals... It also helped me understand and develop more; it improved my imagination too. It is already difficult for me to understand without visuals. It is better this way."*

S8 said, "*It taught me things I never knew, gave me the habit of writing, and improved my imagination.*"

Negative Aspects of Creative Comics

In the second question, the students were asked whether there was a negative aspect of using creative comics in social studies courses. No participants mentioned a negative aspect of using creative comics in

the social studies course but rather stressed the positive effects. For this reason, no table was made regarding this question and the statements of the students were directly presented: S3 said, "*I do not think so. I think they all have positive effects.*" S6 said, "*I do not think there are negative aspects either.*" S8 said, "*I do not think there are any negative aspects either; in fact, there are many positive aspects.*"

The Impact of Creative Comics on Academic Achievement

In the third question, the students were asked how the use of creative comics in the social studies course affected their academic achievement. All participants stated that the use of creative comics in the social studies course positively affected their academic achievement.

As seen in Table 8, five participants pointed out that the subjects were better-understood thanks to the activities, and four of them stated that they participated more in

Table 8
The impact of creative comics on academic achievement

Expressions	f
Enables a better understanding of the course content	5
Increases participation in the lesson	4
Causes appreciation of the activities	1
Increases self-confidence of students	1
Enables students to gain the habit of writing and thinking	1
Enriches the course with visuals	1
Makes the lessons fun	1
Provides an easier understanding of the course	1

the lesson when creative comics were used. Regarding this issue, S2 said, "*It affected my academic achievement positively. I knew some subjects before but did not know them so well, so thanks to the activity, I started to know them better. It was funny and good, I liked it a lot*". Moreover, S4 referred to increased self-confidence, saying, "*It improved my academic achievement. Before that, I could not answer such questions, I was afraid that I would make a mistake, but now I can raise my hand to every question*". With an emphasis on a developed habit of writing and thinking, S6 said, "*It contributed a lot to us. I learnt to write and think; for example, we had the chance to write. Now I can raise my hand more*". S8 pointed to the lessons becoming fun and said, "*It affected my participation in the lesson and added fun to the lesson. Therefore, it affected me positively*".

The Impact of Creative Comics on Students' Attitudes

In the fourth question, students were asked how the use of creative comics affected their attitude towards the social studies course. The analysis of the results revealed that all participants stated in the interview that the use of creative comics positively affected their attitudes.

As shown in Table 9, four participants stated that their interest and curiosity towards the lesson increased, and two students said they enjoyed the activities. Two others indicated that the activities made them like the lesson, and the other two emphasised that the activities saved the

Table 9
The impact of creative comics on students' attitude

Expressions	f
Increases interest and curiosity about the course	4
Provides enjoyable materials for students	2
Allows students to enjoy the lesson	2
Saves the lesson from boredom	2

Table 10
Benefits of cartoons

Expressions	f
Allows a better understanding of the course content	6
Helps visualise the course content	5
Makes the lessons fun	1
Saves the lessons from boredom	1
Provides an easier understanding of the course	1
Draws students' attention	1
Enables students to focus	1

lesson from boredom. Regarding this, S2 stated that the use of creative comics had many benefits, adding, "*It contributed to me a lot, it was very funny and enjoyable. I liked it very much. It affected my attitude positively*", and S7 said,

> "*I used to get bored when I could not find the questions, and I was upset when I got them wrong, but now, I do not have such feelings. I felt happy, I attended more, and now I do not think the way I did before.*"

S3 pointed out the increased interest and curiosity towards the lesson and said, "*The experience was very positive. I liked the lesson more, and my curiosity increased*". S6 emphasised that he liked the lesson more and said, "*I had a lot of fun; it was very positive for me. My love for the lesson increased.*"

Focus Group Interview Results on Cartoons

Benefits of Cartoons

When asked whether the use of cartoons in the social studies course contributed, all participants indicated that it made a great contribution, as provided in Table 10.

As shown in Table 10, six students stated that the content was better understood thanks to cartoons, while five stated that cartoons helped visualise the lessons. Regarding this issue, S9 said, "*Yes. It helped us to reinforce and understand the lesson better and to take better examples from the visuals.*" S10 and S13, respectively said,

> "*Yes. I think we learnt by having fun; we reinforced what we learned better. It made a greater contribution to us. For example, students can get bored in a normal lesson, but we did not when there were cartoon materials. Not only the students, but also the teacher; everyone had fun.*"

> "*It helped us to grasp the content, so the lessons were more effective with visuals. For example, we reinforced the subject matter. Sometimes, some may be distracted, but since you explained it well with cartoons, everyone focused on the subject and made an effort to reinforce their knowledge of it.*"

S14 said, *"Normally, we only read the text in the social studies lesson, but we ended up understanding better with the cartoons. It visualised and attracted my attention, and I understood better."* Views included those stressing that the lessons were more entertaining and visual and that the content was better understood, with the lessons becoming less boring with cartoons.

Negative Aspects of Cartoons

In the second question, the students were asked whether there was a negative aspect of using cartoons in social studies lessons. All participants in the focus group interview stated that there was no negative aspect of using cartoons in the social studies course, so no table was made for this question. When it comes to relevant student views, S12 said, "*I think there was nothing negative because when I read the cartoons, I understood better with examples. I also had fun. It was nicer that way*". S15 said, "*I do not think there was any negativity.*" S16 said, "*I think it was a very nice activity. For example, when someone did not understand something, we reviewed it with cartoons, and everyone understood it.*"

The Impact of Cartoons on Academic Achievement

In the third question, the students were asked about the impact of the use of cartoons in the social studies course on academic achievement. They responded that the use of cartoons in the social studies course positively affected their academic achievement.

As seen in Table 11, five students stated that they understood the lesson better, thanks to the cartoons, and three stated that they could focus on the lesson better. Regarding this issue, S10, S11, S12 and S13 respectively stated,

"For example, I get distracted in a normal class. But here, we also train our brains through cartoons. It was fun, and what I learnt became more permanent... I remember all of them because they were both amusing and entertaining...." (S10)

"I really think that it helps my academic achievement because we normally get distracted by other things. During the exam, when I think about the activities, I remember when I did and learnt things, but this is not the case in other lessons." (S11)

"I think it increased my academic achievement because the visuals in cartoons improve my visual memory more and prevent me from being

Table 11
The impact of cartoons on academic achievement

Expressions	f
Allows a better understanding of the course content	5
Enables students to focus	3
Makes the course content more permanent	2
Makes the activities amusing and entertaining	2
Improves students' visual memory	2
Makes the lessons enjoyable	1
Increases exam grades	1

distracted. I focus on the lesson and understand it better when it is explained with examples. Without those cartoons, I could not focus and understand the lesson better...." (S12)

"I realised that it contributed more to my academic achievement because when we are instructed in a normal way, we read and move on to the next part, but here, both the course content is reinforced better and the information is better engraved in our minds as it is more fun and amusing." (S13)

In summary, S10, S11, S12 and S13 stated that the lessons were better-understood thanks to cartoons, they had fun, they focused better on the lessons, the information acquired became more permanent, and their visual memory improved.

The Impact of Cartoons on Students' Attitudes

In the fourth question, students were asked how the use of cartoons affected their attitude towards the course. All participants stated that the use of cartoons positively affected their attitudes.

As seen in Table 12, six students stated that the lesson was saved from boredom thanks to the cartoons, and six students emphasised that their interest and curiosity towards the lesson increased. Four indicated that the lesson was liked more. S9, S15 and S16 said,

"I think it influenced my attitude well. I used to be very bored in the lesson, but now I like it." (S9)

"My interest in the lesson increased. I wonder what kind of cartoons we will read today, what the visuals will be like. I am happier; it is more fun." (S15)

"The lessons run more smoothly. I understand them better. I am not bored anymore. I started to like the lessons more." (S16)

Given the students' views, it can be concluded that their attitudes were well affected, the lesson was saved from boredom, and their interest and love for it increased.

Table 12
The impact of cartoons on students' attitude

Expressions	f
Saves the lessons from boredom	6
Increases interest and curiosity about the course	6
Makes the course more likeable	4
Makes the course more enjoyable	2
Initiates activities that make students happy	2
Allows a better understanding of the course content	2

DISCUSSION

This study focused on the impact of using cartoons and creative comics in a social studies course on students' academic achievement by taking into account the students' views about the materials. The academic achievement test was administered as a pre-test and post-test to the two groups of students instructed either with creative comics or cartoons, and the control group

instructed with the current curriculum. Then, a focus group interview was conducted with 16 students selected from the two groups instructed with the relevant materials.

The results of the one-way ANOVA test conducted before the experimental activity indicated no significant difference between the mean academic achievement scores among the participants in each group (F(2.88) =2.319, p=0.104, p>0.05). In other words, the academic achievement levels of the groups were close to each other prior to the activities. According to the results of the one-way ANOVA test after the experimental application, there was a significant difference when the mean academic achievement scores of the groups were compared (F(2.98) =6.352, p=0.003, p<0.05). Such a significant difference in post-test scores favoured creative comics and cartoons among all groups, with no significant difference between those instructed through creative comics and cartoons.

The literature review on creative comics indicated similar results. Within this framework, a number of studies on creative writing (Aktaş, 2009; Graham et al., 2021; Kırmızı & Adıgüzel, 2023; Mercan, 2016; Özdemir & Çevik, 2018; Veyis & Kolikpınar, 2021) and some studies on comics in different fields (Arı et al., 2019; Arslan & Akçay, 2022; Badeo & Koç, 2021; Chamisijatin et al., 2020; İlhan, 2016; Lin & Lin, 2016; Maryani & Amalia, 2018; Suryatin & Sugiman, 2019; Şahan, 2023; Ünal, 2018; Ünal & Demirkaya, 2019) are in parallel with this study in terms of their reported results.

In addition, the relevant literature review on cartoons demonstrated that many studies in different fields were reported to have positive influence on academic achievement (Ada & Sözen, 2021; Akbaş & Toros, 2016; Akkaya, 2011; Aksoy et al., 2010; Ayyıldız, 2010; Çakır & Aydoğdu, 2016; Durmaz, 2007; Et & Dilber, 2022; Güngör, 2018; Karaduman & Ceviz, 2018; Karakuş et al., 2012; Koçoğlu, 2016; Özşahin, 2009; Sidekli et al., 2014; Varışoğlu et al., 2014). Unlike these studies, Topkaya (2016) compared educational comics and concept cartoons, concluding that those instructed through comics turned out to be more successful.

The results of the focus group interviews show that the use of creative comics in the social studies course made significant contributions, given the remarks of participants stating that the course content was better understood and that their imaginations grew stronger. Senturk and Senturk (2023) reported that creative comics enriched the learning environment; Putra and Iqbal (2014) concluded that comics improved students' creative thinking and learning ability; Matuk et al. (2021) and Selong et al. (2021) found that the use of comics proved to have many benefits. In addition, Çetinkaya (2015) asserted that creative writing contributed to students' learning capacity.

Another result is that the use of creative comics in the social studies course does not have a negative aspect and positively affects students' academic achievement, and students understand the course content and

participate more in the lesson. Similar to this result, studies are reporting that comics boost students' academic achievement (Hermita et al., 2020; Özdemir, 2017; M. Şentürk & Şimşek, 2022; Topkaya, 2016).

Moreover, it also seems clear that the use of creative comics positively affected students' attitudes towards the course. The participants stated that their interest in the lesson increased, they started to like it, and the lesson became less boring. Research shows that the use of creative writing and comics positively affect students' attitude (Arı et al., 2019; Babayigit, 2019; Göçen, 2018; Gürsoy & Göçer, 2021; İlhan, 2016; Orçan, 2013; Kırmızı & Beydemir, 2012; M. Şentürk & Şimşek, 2022; Topkaya & Şimşek, 2015; Veyis & Kolikpınar, 2021). Unlike these results, Ünal and Demirkaya (2019) concluded that the use of educational comics in the social studies course did not affect students' attitudes towards the course.

Overall, the results, including students' views about the use of cartoons in social studies courses, indicated that the use of cartoons had many contributions. The participants stated that the course content was better understood with the use of cartoons since such materials helped visualise what was being taught. Similarly, Özşahin (2009) analysed students' views on the use of cartoons, concluding that lessons became more fun, the course content was retrieved more easily, and students' skills improved. Furthermore, Çiçek (2011) reported that cartoons enabled better learning opportunities, and the lessons were more fun. Durmaz (2007) investigated

the effect of concept cartoons, reporting that students became more careful and willing to considerably positive views. Similarly, Göksu and Köksal (2016) indicated that the use of cartoons improved students' problem-solving skills.

One more result is that the use of cartoons did not have a negative aspect and positively influenced students' academic achievement. It was determined that the students understood the lessons better and focused on them more. Research has also shown similar studies concluding that cartoons support students' academic achievement (Akengin & İbrahimoğlu, 2010; Koçoğlu, 2016; Özşahin, 2009; Tuncel, 2017). In contrast, Akengin and İbrahimoğlu (2010) emphasised the presence of some challenges in the use of cartoons with which some students had difficulties.

An obvious result based on the available data is that the use of cartoons has a positive effect on student attitudes towards the social studies course since the participants stated that the lesson was saved from boredom and became more popular and that their interest and curiosity increased. A number of studies with similar results have been found in the literature on the use of cartoons positively affecting students' attitudes (Akkaya, 2011; Koçoğlu, 2016). The results of the present study largely overlap with those of Akbaş and Toros (2016), suggesting that the use of cartoons provides permanent learning, is fun and interesting, and reinforces what has been learnt. Similarly, Barut and Akbaba (2017) reported that students' interest and curiosity increased with the use of cartoons.

Unlike this result, Çiçek (2011) reported that although the participants expressed positive views about the use of cartoons, there was no statistical significance in terms of post-test attitude scores.

CONCLUSION

Implication to Theory and Practice

This study revealed that cartoon and creative comic book materials in the social studies course provided many contributions to the students. From this point of view, these materials increased students' academic achievement and positively affected students' attitudes. In this context, it can be said that cartoon and creative comic materials attract students' attention, improve their imagination and problem-solving skills, make the lessons fun, provide better learning for students and are effective motivational tools. In addition, it can also be said that these materials save the lesson from boredom, make students love the lesson, visualise it and increase students' self-confidence. In addition, these materials can enable students to focus on the lesson, increase their participation, and play an important role in helping students gain the habit of writing and thinking.

Recommendations

Using cartoons and creative comics appropriate to the course content, intended learning outcomes, and student levels is recommended to save the social studies course from being boring and make it more interesting. It can also be suggested that cartoons and creative comics be utilised at different grade levels and for different course content in the social studies course. In this context, it is recommended that future studies be conducted to benefit from cartoons and creative comics in social studies and different courses.

ACKNOWLEDGEMENTS

REFERENCES

Ada, S., & Sözen, E. (2021). The effect of using concept cartoons in social studies lessons on student achievement. *International Journal of Geography and Geography Education*, *44*, 161-175. https://doi.org/10.32003/igge.908348

Ak, B. (2008). Verilerin düzenlenmesi ve gösterimi [Organizing and presenting data]. In Ş. Kalaycı (Ed.), *SPSS uygulamalı çok değişkenli istatistik teknikleri* (pp. 3-47). Dinamik Akademi.

Akbaş, Y., & Toros, S. (2016). Sosyal bilgiler öğretiminde interaktif kavram karikatürleri ve kavram haritaları kullanımının akademik başarıya etkisi [The effects of using interactive cartoons and concept maps an academic achievement in social studies teaching]. *Turkish Studies*, *11*(9), 53-68. https://doi.org/10.7827/TurkishStudies.9727

Akengin, H., & İbrahimoğlu, Z. (2010). Sosyal bilgiler dersinde karikatür kullanımının öğrencilerin akademik başarısına ve derse ilişkin görüşlerine etkisi [The effect of using cartoons in social studies lessons on students' academic achievement and their views about the course]. *Ondokuz Mayis University Journal of Education*, *29*(2), 1-20.

Akkaya, A. (2011). *Karikatürlerle dil bilgisi öğretimi* [Teaching grammar with cartoons] [Doctoral dissertation, Selçuk Üniversitesi]. Thesis Collection of the Institute of Educational Sciences. https://hdl.handle.net/20.500.12395/2326

Aksoy, B., Karatekin, K., Kuş, Z., & Sönmez, Ö. F. (2010). Sosyal bilgiler öğretiminde karikatür kullanımının öğrencilerin akademik başarısına etkisi [The effect of using cartoons in social studies teaching on students' academic achievement]. *Education Sciences*, *5*(4), 1483-1497.

Aktaş, M. (2009). Yabancı dil öğretiminde yaratıcı yazmanın başarıya ve yazılı anlatıma etkisi [The effect of creative writing on achievement and on writing skills in foreign language teaching]. *Dil Dergisi,* (145), 7-27. https://doi.org/10.1501/Dilder_0000000113

Alkan, G. (2010). *Sosyal bilgiler öğretiminde kavram karikatürlerinin öğrenci başarısına etkisi* [The effect of the concept cartoons to the students of the social studies teaching] [Unpublished master's thesis]. Niğde Üniversitesi.

Arı, A. A., Demir, B., & Işık, B. B. (2019). Matematik öğretiminde manga çizgi roman kullanımının etkilerini araştıran çalışmalar [Studies investigating the effects of using manga comics in mathematics teaching]. *Bayburt University Journal of Science, 2*(2), 261-265.

Arslan, K., & Akçay, H. (2022). Çizgi romanla fen bilimleri öğretiminin öğrenci başarısına etkisi [The effects of science teaching with comics on student achievement]. *Bilim, Eğitim, Sanat ve Teknoloji Dergisi, 6*(1), 14-31. https://doi.org/10.46328/bestdergi.74

Ayyıldız, N. (2010). *Coğrafya öğretiminde karikatür materyali kullanımının öğrenci başarısına etkisi* [The effect of using cartoon materials in geography teaching on student achievement] (Publication No. 28589809) [Master's thesis, Marmara Üniversitesi]. ProQuest Dissertations & Theses.

Babayigit, O. (2019). Examining the effect of creative writing activities on reading, writing and language lesson attitudes of elementary school fourth grade students. *European Journal of Educational Research*, *8*(1), 213-220. https://doi.org/10.12973/eu-jer.8.1.213

Badeo, J. M., & Koc, B. C. O. K. (2021). Use of comic-based learning module in mechanics in enhancing students' conceptual understanding and motivation. *Science Education International*, *32*(2), 131-136.

Barut, D., & Akbaba, B. (2017). 6. sınıf sosyal bilgiler dersinde karikatür kullanımının yaratıcı düşünme becerilerine etkisi [The effect of using cartoons in the 6th-grade social studies course on creative thinking skills]. *Journal of Anatolian Cultural Research*, *1*(1) 51-69.

Bilici, S. C. (2019). Örnekleme yöntemleri [Sampling methods]. In H. Özmen & O. Karamustafaoğlu (Eds.), *Eğitimde araştırma yöntemleri* (pp. 56-78). Pegem Akademi.

Büyüköztürk, Ş., Çakmak, E. K., Akgün, Ö. E., Karadeniz, Ş., & Demirel, F. (2014). *Bilimsel araştırma yöntemleri* [Scientific research methods]. Ayrıntı Printing and Publishing.

Çakır, A., & Aydoğdu, B. (2016). Çevre sorunları konusunun öğretiminde karikatür kullanımının öğrencilerin akademik başarılarına ve çevreye yönelik tutumlarına etkisi [The effect of teaching the topic of environment problems by using caricature on students' academic success and attitude towards]. *The Western Anatolia Journal of Educational Sciences, 7*(14), 102-116.

Can, A. (2017). *SPSS ile bilimsel araştırma sürecinde nicel veri analizi* [Quantitative data analysis in the scientific research process with SPSS]. Pegem Akademi.

Çetinkaya, G. (2015). Examining teachers' use of creative writing activities. *The Anthropologist*, *19*(1), 111-121.

Chamisijatin, L., Lestari, R. D., Husamah, A. F., Fatmawati, D., & Nurhasanah, S. (2020). Developing comic of human skeletal system and its potential in improving junior high school students' learning achievement. *Universal Journal of Educational Research*, *8*(12), 6383-6393. https://doi.org/10.13189/ujer.2020.081204

Çiçek, T. (2011). *İlköğretim 6. sınıf fen bilimleri dersinde kavram karikatürlerinin öğrenci başarısına, tutumuna ve kalıcılığına etkisi* [The effect of concept cartoons on student achievement, attitude and permanence in science and technology courses in primary school 6th grade] [Master's thesis, Celal Bayar Üniversitesi]. Ulusal Tez Merkezi. https://tez.yok.gov.tr/UlusalTezMerkezi/tezDetay.jsp?id=qSQ8qIMdi-C9WN_XDSIqFA&no=UstN8LNRtG3mPRswdn5uiQ

Creswell, J. W., & Clark, V. L. P. (2018). *Karma yöntem araştırmaları tasarımı ve yürütülmesi* [Design and Conducting of mixed methods research] (Y. Dede & S. B. Demir, Trans.). Anı Publishing.(Original work published in 2011)

Creswell, J. W., Fetters, M. D., Clark, V. L. P., & Morales, A. (2009). Mixed methods intervention trial. In. S. Andrew & L. Halcomb (Eds.), *Mixed methods research for nursing and the health sciences* (pp. 161-180). Blackwell. https://doi.org/10.1002/9781444316490.ch9

Dirik, M. Z. (2015). *Eğitim programları ve öğretim, öğretim ilke ve yöntemleri* [Education programmes and teaching, teaching principles and methods]. Pegem Akademi.

Durmaz, B. (2007). *Yapılandırıcı fen öğretiminde kavram karikatürlerinin öğrencilerin başarısı ve duyuşsal özelliklerine etkisi* [The effects of the concept cartoons to the success of the students and sensory features in the constructivist science teaching Muğla provincial, Administrative District sample] [Master's thesis, Muğla Üniversitesi]. Ulusal Tez Merkezi.

Et, E., & Dilber, N. Ç. (2022). Karikatürle yazma çalışmalarının ortaokul öğrencilerinin yaratıcı yazma başarısına etkisi [The effects of writing studies using cartoons on the creative writing achievement of secondary school students]. *Ana Dili Eğitimi Dergisi, 10*(2), 291-308. https://doi.org/10.16916/aded.1023541

Glesne, C. (2015). *Nitel araştırmaya giriş* [Introduction to qualitative research] (A. Ersoy & P. Y. Çev, Eds.). Anı Yayıncılık. (Original work published in 1992)

Göçen, G. (2018). Sınıf öğretmenlerinin yazmaya yönelik yeterlilik algısına, tutumuna ve yaratıcı yazma başarısına yaratıcı yazma çalışmalarının etkisi [The effect of creative writing activities of primary school teachers on their perceived competence and attitude towards writing and success in creative writing]. *Turkish Studies, 13*(27), 737-762. https://doi.org/10.7827/TurkishStudies.14438

Göksu, F. C., & Köksal, N. (2016). Doğrular, açılar ve çokgenler konularının kavram karikatür destekli yapılandırmacı öğrenme yaklaşımına göre işlenmesi [Teaching the lines, angles and polygons according to constructivisim supported by concept cartoons]. *Eğitimde Nitel Araştırmalar Dergisi- Journal of Qualitative Research in Education, 4*(3), 68-91.

Graham, S., Tavsanli, O. F., & Kaldirim, A. (2021). Improving writing skills of students in Turkey: A meta-analysis of writing interventions. *Educational Psychology Review, 34,* 889-934. https://doi.org/10.1007/s10648-021-09639-0

Green, S. B., & Salkind, N. J. (2005). *Using SPSS for Windows and Macintosh: Analyzing and understanding data.* Pearson.

Güngör. H. (2018). *Fen ve teknoloji öğretiminde kavram karikatürü kullanımının ilköğretim 7. Sınıf öğrencilerin akademik başarılarına etkisi* [Effect of using concept caricature in science and technology teaching to academic success

of 7th graders] [Unpublished master's thesis]. Necmettin Erbakan Üniversitesi.

Gürsoy, H. C., & Göçer. A. (2021). Okuma saatlerinde hikâye kitabı ve çizgi roman okumayla ilgili öğrenci görüşleri (Köy okulu örneği) [Student opinions about reading story book and comic book in reading hours (example for village school)]. *Journal of Institute of Social Sciences, 12*(1), 306-331.

Hermita, N., Ningsih, H. S., Alim, J. A., Alpusari, M., Putra, Z. H., & Wijaya, T. T. (2020). Developing science comics for elementary school students on animal diversity. *Solid State Technology, 63*(1), 2492-2500.

İlhan, G. O. (2016). *Sosyal bilgiler öğretiminde çizgi romanların kullanımı* [Use of comics in social studies teaching] [Doctoral thesis, Afyon Kocatepe Üniversitesi]. https://tez.yok.gov.tr/UlusalTezMerkezi/tezDetay.jsp?id=NjSWxck2avZrasUtZggdEA&no=qJc0yMilwTkEfOgLUPeg6g

İlhan, G. O., & Oruç, Ş. (2019). Sosyal bilgiler dersinde çizgi roman kullanımı: Teksas tarihi [Comic books use in social studies lesson: Texas history]. *Education and Science*, *44*(198), 327-341. https://doi.org/10.15390/EB.2019.7830

Karaduman, G. B., & Ceviz, A. E. (2018). Matematik öğretiminde kavram karikatürlerinin öğrenci başarısına etkisi [Effect of concept cartoons on student achievement in mathematics teaching]. *Electronic Journal of Social Sciences*, *17*(67), 1268-1277. https://doi.org/10.17755/esosder.407222

Karakuş, U., Palaz, T., Kılcan, B., & Çepni, O. (2012). Sosyal bilgiler müfredatında yer alan" Çevre Sorunları" konularının öğretiminde karikatür kullanımının öğrencilerin akademik başarısına etkisi [The effect of the use of cartoons on students' academic achievement in "environmental problems" issues in social sciences curriculum]. *Gazi University Gazi Faculty of Education Journal*, *32*(2), 363-376.

Karasar, N. (2017). *Bilimsel araştırma yöntemi: kavramlar ilkeler teknikler* [Scientific research method: concepts, principles, techniques]. Nobel Academy Publishing.

Kaya, B. (2013). Yaratıcı yazma becerisinin geliştirilmesine yönelik yapılan çalışmalardan bir derleme [A compilation of studies conducted for development of the creative writing skills]. *Research in Reading & Writing Instruction,*, *1*(2), 89-101.

Kazanevsky, V. (2005). Doğu Avrupa ülkelerinde karikatür sanatının belirli özellikleri [Specific features of caricature art in Eastern European countries]. *4th International Ankara Cartoon Festival.* Karikatür Vakfı.

Kırmızı, F., & Adıgüzel, D. Ç. (2023). İlkokul yaratıcı yazma ürünlerinin bazı değişkenlere göre değerlendirilmesi [Evaluation of primary school students' creative writing products according to some variables]. *Pamukkale University Journal of Education*, (58), 370-397. https://doi.org/10.9779/pauefd.1091976

Kırmızı, F., & Beydemir, A. (2012). İlköğretim 5. sınıf Türkçe dersinde yaratıcı yazma yaklaşımının yazmaya yönelik tutumlara etkisi [Effect of attitudes for writing of creative writing approach in turkısh course of prımary fıfth grades]. *Ahi Evran University Journal of Kırşehir Education Faculty*, *13*(3), 319-337.

Kleeman, G. (2006). Not just for fun: Using cartoons to investigate geographical issues. *New Zealand Geographer*, *62*(2), 144-151. https://doi.org/10.1111/j.1745-7939.2006.00057.x

Koçoğlu, E. (2016). Sosyal bilgiler dersinde karikatür kullanımının erişiye göre değerlendirilmesi [Social studies lessons according to criteria evaluation of the use of cartoon]. *International Journal Of Eurasia Social Sciences, 7*(7), 299-318.

Köksal, F. N. (2019). Öğretim içeriğinin seçimi ve düzenlenmesi [Selection and organisation of

teaching content]. In Ş. Tan (Ed.), *Teaching principles and methods* (pp. 61-84). Pegem Akademi.

Krueger, R. A. (1994). *Focus groups: A practical guide for applied research.* SAGE.

Kunzle, D. (1973). *The early comic strip: Narrative strips and picture stories in the European broadsheet from c. 1450 to 1825.* University of California Press.

Lin, S.-F., & Lin, H.-S. (2016). Learning nanotechnology with texts and comics: the impacts on students of different achievement levels. *International Journal of Science Education*, *38*(8), 1373-1391. https://doi.org/10.1080/09500693.2016.1191089

Maryani, I., & Amalia, L. (2018). The development of science comic to improve student's understanding in elementary school. *Jurnal Inovasi Pendidikan IPA*, *4*(1), 75-82. https://doi.org/10.21831/jipi.v4i1.21076

Matuk, C., Hurwich, T., Spiegel, A., & Diamond, J. (2021). How do teachers use comics to promote engagement, equity, and diversity in science classrooms? *Research in Science Education, 51*, 685-732. https://doi.org/10.1007/s11165-018-9814-8

McMillan, J., & Schumacher, S. (2014). *Research in education evidence-based inquiry*. Pearson Education.

Mercan, S. I. (2016). Coğrafya öğretiminde yaratıcı yazma yönteminin etkililiği [Effectiveness of creative writing methods in geography education]. *International Journal of Turkısh Education Sciences*, (7), 131-140.

Orçan, A. (2013). *Çizgi-roman tekniği ile geliştirilen bilim-kurgu hikâyelerinin öğrencilerin yaratıcı düşünme becerilerinin ve fiziğe ilişkin tutumlarının gelişimine etkisi* [The effect of science-fiction strories developed by comics technique, on creative thinking skills and

physics attitudes of students] [Master's thesis, Gazi Üniversitesi]. https://tez.yok.gov.tr/UlusalTezMerkezi/tezDetay.jsp?id=qJZSJFexOZUeRGyKedhkXw&no=LI6w96wwEjdTzSXNyKFB7w

Oruç, Ş. (2006). *Sosyal bilgiler öğretiminde mizah* [Humor in social studies teaching] [Unpublished doctoral thesis]. Gazi Üniversitesi.

Özdemir, E. (2017). Humor in elementary science: development and evaluation of comic strips about sound. *International Electronic Journal of Elementary Education*, *9*(4), 837-850.

Özdemir, S., & Çevik, A. (2018). The effect of creative writing studies on attitudes towards writing and the creative writing success. *Inonu University Journal of The Faculty of Education, 19*(2), 141-153. https://doi.org/10.17679/inuefd.336990

Özşahin, E. (2009). Karikatürlerle coğrafya öğretimi [Caricatures with geography education]. *International Journal of Geography and Geography Education,* (20), 101-122.

Putra, P. D. A., & Iqbal, M. (2014). Implementation of digital comic to improve creative thinking ability in integrated science study. *Interaction*, *4*(3), 71-74.

Şahan. Z. (2023). *Fen Bilimleri öğretiminde eğitici dijital çizgi roman materyali tasarımı ve materyalin kullanımının akademik başarıya etkisi tezi* [Design of educational digital comics material in science teaching and the effect of the use of the material on academic success] [Master's thesis, Nevşehir Hacı Bektaş Veli Üniversitesi].

Selong, R. N., Olii, S. T., & Rettob, A. (2021). Students'perception on the use of comic strips in creative writing. *Journal of English Language and Literature Teaching*, *5*(2), 79-85. https://doi.org/10.36412/jellt.v5i2.2458

Şentürk, M. (2022). 21. Yüzyıl becerileri eğitiminde yaratıcı çizgi roman [21st century skills education

in creative comics]. In M. Senturk, U. Simsek & Y. Topkaya (Eds.), *21st century skills training with innovative approaches* (pp. 63-75). Vizetek Publishing.

Şentürk, M., & Şimşek, U. (2022). The effect of educational comics and educational cartoons on student attitude and motivation in social studies course. *International Journal of Education Technology & Scientific Researches*, (17), 378-413. https://doi.org/10.35826/ijetsar.422

Senturk, M., & Senturk, O. C. (2023). The social studies and science pre-service teachers' experiences of creative comics for environmental education. *International Journal of Research in Education and Science, 9*(1), 109-123. https://doi.org/10.46328/ijres.3080

Şentürk, Ö. Ç. (2020). *Argümantasyon destekli eğitici çizgi romanların öğrencilerin çevreye yönelik ilgi, motivasyon ve akademik başarılarına etkisi ile öğrenci deneyimleri* [The effect of argumentation-supported educational comics on students' environmental interests, motivation, and academic achievements and student experiences] [Doctoral dissertation, Gazi Üniversitesi]. Gazi University Research Information System. https://avesis.gazi.edu.tr/yonetilen-tez/ac46491f-42e8-46c7-be36-fe2a436eff0d/argumantasyon-destekli-egitici-cizgi-romanlarin-ogrencilerin-cevreye-yonelik-ilgi-motivasyon-ve-akademik-basarilarina-etkisi-ile-ogrenci-deneyimleri

Sidekli, S., Er, H., Yavaşer, R., & Aydın, E. (2014). Sosyal bilgiler öğretiminde alternatif bir yöntem: Karikatür [An alternative method in social studies education: cartoon]. *The International Journal of Turkish Education Sciences*, *2*(2), 151-163.

Suryatin, S., & Sugiman, S. (2019). Comic book for improving the elementary school students' mathematical problem solving skills and self-confidence. *Jurnal Prima Edukasia*, *7*(1), 58-72. https://doi.org/10.21831/jpe.v7i1.10747

Tabachnick, B. G., & Fidell, L. S. (2015). *Use of multivariate statistics*. Nobel Press.

Tan, Ş. (2019). Öğretimin materyallerle desteklenmesi [Supporting teaching with materials]. In Ş. Tan (Ed.), *Teaching principles and methods* (pp. 219-254). Pegem Akademi.

Tok, M., Rachim, S., & Kuş, A. (2014). Yazma alışkanlığı kazanmış öğrencilerin yazma nedenlerinin incelenmesi [Analysing the writing reasons of the learners who gained writing habits]. *Gazi University Gazi Faculty of Education Journal*, *34*(2), 267-292. https://dergipark.org.tr/tr/pub/gefad/issue/6729/90483

Tokcan, H., & Alkan, G. (2013). Sosyal bilgiler öğretiminde kavram karikatürlerinin öğrenci başarısına etkisi [The effect of the concept cartoons to the students of the social studies teaching]. *Ahi Evran University Journal of Kırşehir Education Faculty*, *14*(2), 1-19. https://dergipark.org.tr/tr/pub/kefad/issue/59471/854595

Topcubaşı, T., & Polat, S. (2014). Sosyal bilgiler öğretiminde kavram karikatürlerinin öğrenci başarısına etkisi [The effect of concept cartoons on student achievement in social studies teaching]. *International Journal of New Trends in Arts, Sports & Science Education, 3*(2), 48-61.

Topkaya, Y. (2016). Doğal çevreye duyarlılık değerinin aktarılmasında kavram karikatürleri ile eğitici çizgi romanların etkiliğinin karşılaştırılması [A comparison between impact of concept cartoons and impact of instructional comics in teaching value of sensation on natural envıronment]. *Hatay Mustafa Kemal University Journal of Social Sciences Institute*, *13*(34), 259-272.

Topkaya, Y., & Şimşek, U. (2015). Vatandaşlık ve demokrasi eğitimi dersine yönelik tutum üzerinde eğitici çizgi romanların etkisi [Impact of instructional comics on the attitudes towards citizenship and democracy education]. *Journal*

of Computer and Education Research, *3*(6), 152-167.

Tuncel, G. (2017). Sosyal bilgiler dersinde karikatürlerle küresel ısınma eğitimi üzerine örnek bir çalışma [An example study on global warming education with cartoons in social studies lessons]. *Marmara Geographical Review*, (35), 87-94.

Ünal, O. (2018). *Sosyal bilgiler dersinde eğitici çizgi roman kullanımının öğrenci başarısı ve tutumuna etkisi* [The effect of using educational comics in social studies course on students' success and attitudes] [Master's thesis, Akdeniz University]. https://tez.yok.gov.tr/UlusalTezMerkezi/tezDetay.jsp?id=S5bgXhkhY2qFB8CMuUeb9w&no=QwXiCZ1pl3Nxk64VQ3lmiw

Ünal, O., & Demirkaya, H. (2019). A semi-experimental study on the use of educational comics in social studies. *International Journal of Geography and Geography Education,* (40), 92-108. https://doi.org/10.32003/iggei.569650

Varışoğlu, B., Şeref, İ., Gedik. M., & Yılmaz, İ. (2014). Deyim ve atasözlerinin öğretilmesinde görsel bir araç olarak karikatürlerin başarıya etkisi [The effect of cartoons as a visual tool on success in teaching idioms and proverbs]. *Black Sea Studies, 41*(41)*,* 226-242.

Veyis, F., & Kolikpınar, N. (2021). Yaratıcı yazma teknikleri ile öyküleyici metin oluşturmanın Türk dili ve edebiyatı dersine yönelik tutum, yazma becerisi ve akademik başarı üzerindeki etkisi [The effect of creating a narrative text with creative writing techniques on attitudes towards Turkish language and literature course, writing skills and academic success]. *Asya Studies-Academic Social Studies, 5*(18), 43-51. https://doi.org/10.31455/asya.1019104

Yıldırım, A., & Şimşek, H. (2016). *Sosyal bilimlerde nitel araştırma yöntemleri* [Qualitative research methods in social sciences]. Seçkin Publishing.

SOCIAL SCIENCES & HUMANITIES

Review Article

A Systematic Review of Associations Between Physical Activities and Environmental Factors among Older Adults in Urban Parks

Yurui Chen[1,2], Shureen Faris Abdul Shukor[1]*, Suhardi Maulan[1] and Adam Aruldewan Muthuveeran[1]

[1]*Department of Landscape Architecture, Faculty of Design and Architecture, Universiti Putra Malaysia, 43400 Serdang, Selangor, Malaysia*
[2]*Department of Urban Planning and Landscape Architecture, School of Architecture and Civil Engineering, Xihua University, 610039, Chengdu, China*

ABSTRACT

With the escalating global trend of population ageing, urban parks are increasingly recognised as pivotal spaces for leisure activities among older adults. Comprehensive reviews focusing on older adults' activities in urban parks, along with the pertinent environmental factors, remain scarce. This paper provides an in-depth study of the literature on older adults' activity patterns in urban parks and the environmental factors that influence their activities. A systematic search was conducted using keywords in reputed databases such as SCOPUS and WoS, resulting in the review of 85 papers, which were subsequently analysed thematically using ATLAS.TI software. Research trends can be categorised into health indicators, proximity and psychosocial factors from 2003 to 2024. The most common activity that older adults engage in is walking, and park design factors such as path width, vegetation cover and pet-friendliness significantly influence their walking behaviour. In addition, older adults' physical activity is influenced by the physical environment and by psychosocial factors, showing geographic and gender differences. Older adults' motivations for using parks include thermal comfort, meaning of place, and social interaction, factors strongly associated with their physical and mental recovery, as well as well-being. Future research should further explore the specific mechanisms at play between environmental factors and physical activity among older adults, with attention to differences across cultural contexts, to provide a more comprehensive guide to the design of urban parks.

Keywords: Activity patterns, ageing population, environmental impacts, park design

INTRODUCTION

With the deepening of social ageing, the focus of societal attention has shifted to older individuals' quality of life. Promoting older adults' physical activity is essential to maintaining and enhancing their well-being. One of the most crucial goals of public health has always been to encourage physical activity among the general people (Chenghe et al., 2019). The physical benefits of physical activities in a green environment have been proven (Battaglia et al., 2020; Han et al., 2021; Kabisch et al., 2021; Sun & Yu, 2021; K. Wang et al., 2021; M. Wang et al., 2021). For instance, strolling through urban parks promotes psychological and physiological relaxation as well as a diverse perception of the scenery (Pratiwi et al., 2020). Parks are acknowledged as a public health measure that encourages physical activity (King et al., 2015).

The Ecological Theory of Ageing (ETA) emphasises the significance of the physical context (Lawton & Nahemow, 1973). The early research of two classic theories explains the restorative effect of the environment on people, namely the stress reduction theory and the attention restoration theory (S. Kaplan, 1995; Ulrich et al., 1991). Research from Bohari et al. (2024) states that green compounds and gardens will stimulate comfort for older people and make them feel restful, thus encouraging them to be more involved in recreational activities. They studied the characteristics of retirement villages and their surrounding environment from the perspective of Generation X individuals residing in East Malaysia. Previous research has highlighted the physical benefits of leisure activities in green environments. However, studies on park utilisation showed that over half of city dwellers avoid going to parks for active or passive purposes during the week (Bai et al., 2013).

Previous reviews of the built environment and older adults' physical activities have not found consistent correlations (Barnett et al., 2017; Van Cauwenberg et al., 2011). Many environmental attributes are understudied in physical activity outcomes for seniors (Van Cauwenberg et al., 2018). Gibson's (1979/1986) affordance theory was used to position this study, namely that the different functions of urban parks influence the activities of older adults in urban parks. This highlights the need for further research into the interactions between activity and environmental factors in urban parks for older adults. Physical activities in parks allow seniors to remain socially active and promote an optimal fit between seniors and their environment (Levy-Storms et al., 2018). Therefore, this paper aims to identify the activity patterns of older adults in urban parks and the factors that influence their physical activities.

LITERATURE REVIEW

Multiple review articles have delved into the factors that influence the physical activities of older adults in urban environments. Qualitative studies can provide nuanced insights into the factors influencing physical activities but have often been excluded from previous reviews.

An early review concluded that most of the environmental characteristics studied were not related to physical activities in older adults (Van Cauwenberg et al., 2011). Most of the studies reviewed were in North America and Europe. However, a study by R. Zhang, Duan, et al. (2019) is inconsistent with this view. Their examination of exercise in parks and community environmental features emphasises paths/trails, lighting, and incivilities as key factors for park physical activities. Safety, walking accessibility, and proximity to parks, natural landscapes, and recreational facilities are among the key elements identified (Bonaccorsi et al., 2020; Van Cauwenberg et al., 2018). The evidence regarding these factors is inconclusive for older adults in urban parks.

Barnett et al. (2017) revealed variations in the strength of the association between these factors and physical activities depending on the older adults' activities and environmental indicators. D. Li et al. (2023) suggested a positive correlation between various environmental factors and physical activities among older adults, aligning with the emphasis on safety, aesthetics, and amenities. McCormack et al. (2010) underscored that socio-demographic characteristics and perceptions of park attributes may influence physical activity patterns in older individuals. Nevertheless, D. Li et al.'s (2023) review, which excluded qualitative research, poses a limitation in capturing nuanced perspectives, contrasting with McCormack's approach. Another review by Kaczynski and Henderson (2007) indicates a general association between park proximity and increased physical activity. However, reviews by Kaczynski lack

Table 1

Related literature review on PA in older adults in different environments

	Bonaccorsi et al. (2020)	Van Cauwenberg et al. (2018)	R. Zhang, Wulff, et al. (2019)	D. Li et al. (2023)	McCormack et al. (2010)	Kaczynski & Henderson (2007)
Safety	√			√	√	
Walking accessibility	√	√		√		
Urbanisation	√					
Walkability	√	√				
Proximity					√	√
Natural landscapes	√	√		√		
Amenities				√	√	
Aesthetics				√	√	
land-use mix	√	√				
Incivilities			√			
Paths			√	√		
Water				√		
Lighting	√		√			
Maintenance					√	

specific information on park characteristics that influence physical activities in older adults. The variables covered in these reviews are listed in Table 1.

In addition to environmental factors, the interplay between social, environmental, and individual factors is complex and dynamic, influencing physical activity (Sallis et al., 2006). Psychosocial factors and individuals' perceptions of their environment influence older adults' physical activity patterns (Wagner et al., 2020).

These reviews suggest that factors such as safety, aesthetics, accessibility, and proximity play a crucial role in influencing patterns of physical activities. However, findings on the relationship between different built environments and activity levels of older adults are inconsistent, as are results on whether many environmental features are related to older adults' physical activities. There is a lack of specific information on park features that influence physical activities in older adults. Therefore, a comprehensive review that includes quantitative and qualitative studies is necessary to gain insight into the factors influencing physical activities among older adults in urban parks.

METHODS

A thematic review was conducted using ATLAS.ti 9, a software which aligns with the methodology that employs a thematic analysis procedure in the literature review (Zairul, 2020). Theme analysis is the act of finding patterns and developing themes after carefully reading the subject (Braun &

Clarke, 2013). The next steps are identifying patterns and constructing categories to gain insight into the activity patterns and influencing factors. The selection of documents was based on several criteria. Studies that were identified and satisfied all requirements were eligible.

Published literature between the year 2003–2024. The start of 2003 was chosen for this paper because of the shift in attention during that time to how design affects other important factors in health, particularly physical activities (Killingsworth et al., 2003). Literature searches were conducted through Scopus and WoS database searches. The search terms were applied to the title, abstract, and keyword fields, focusing on urban park issues for older adults. The article type is a peer-reviewed publication in English. Articles published in international peer-reviewed journals were preferred to conference papers because they were rigorously reviewed and avoided additional criteria for assessing the quality of a potentially large number of papers. Research design contains quantitative, qualitative, or mixed methods. The keywords used in the search are shown in Table 2.

The studies' screening procedure is shown in Figure 1. Thirteen hundred and fifty-one articles were found. There are 1272 papers in Web of Science and 79 articles in Scopus, among the publications that were found using keywords, titles, and abstracts. Based on the screening criteria, 1216 articles were excluded by title and abstract screening. Forty-one articles were excluded as they were reviews and did not

Table 2
Searching from Scopus and WoS

Database	Search strategy
Scopus	(TITLE-ABS-KEY (older adults) AND TITLE-ABS-KEY (urban AND park) AND TITLE-ABS-KEY activity) OR TITLE-ABS-KEY (park AND based AND physical AND activities)) AND PUBYEAR > 2002 AND PUBYEAR < 2024 AND (LIMIT-TO (DOCTYPE, "ar") AND(LIMIT-TO (LANGUAGE, "English"))
	Document types: Article 2003-2023
WoS Core Collection database	TS=(older adults) AND TS=(urban park) AND TS=(activity*) OR TS=(park based physical activities)
	Document types: Article 2003-2023

involve older adults or did not explore the relationship between physical activities and landscapes. Additionally, articles concerning implementing and evaluating fitness programs were excluded (Collins et al., 2021; Orsega-Smith et al., 2003) due to their limited relevance to environmental factors. Consequently, 85 articles met the selection criteria and were included. These articles were uploaded into ATLAS. Ti 9, serving as the literature to be reviewed. Each paper was categorised by author, issue number, journal, publisher, number of publications, and year of publication, as shown in Figure 2.

The remaining 134 documents were transferred to Atlas after all 1346 data were processed in Mendeley. Ti 8. In Atlas, the full-text reading, in the first round of coding, generated 85 initial codes. This result shows that research on the physical activities in senior citizens' parks is on the rise. There were only four papers in 2024 at the time of writing, probably because some were still in progress (Figure 3).

Later, the code was divided into four main categories, contributing to the final four. The research article was analysed and
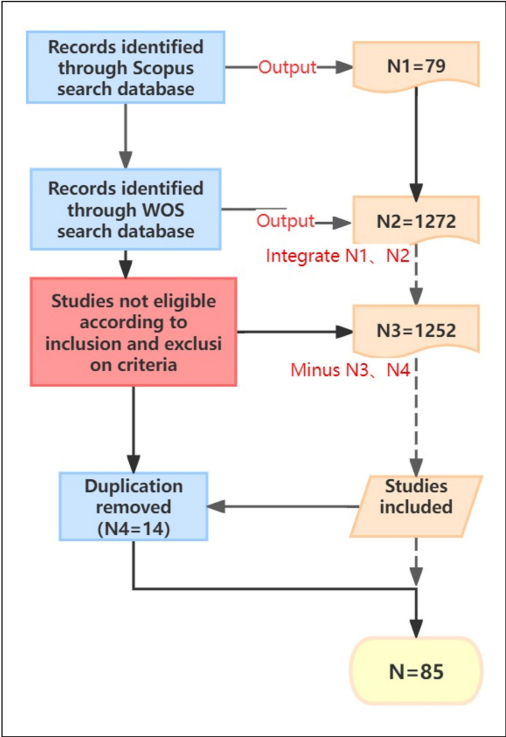
Figure 1. Inclusion and exclusion criteria

further divided into four topics from the initial coding: Activity, Characteristic and Activity, Motivation, Characteristic and Perception.

Articles appear most frequently in the following journals. There are 12 articles in the *International Journal of Environmental*
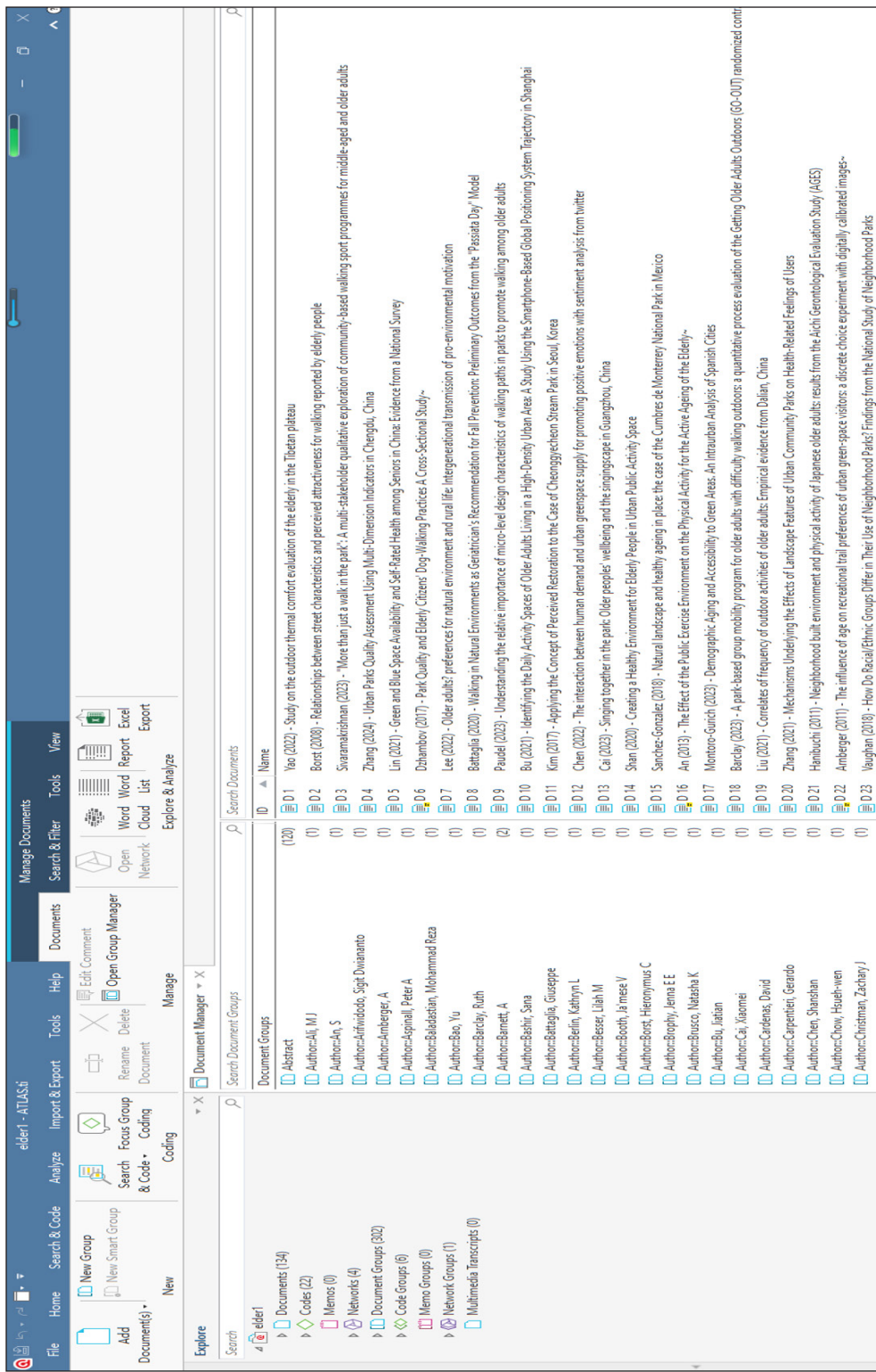
Figure 2. The Mendeley metadata
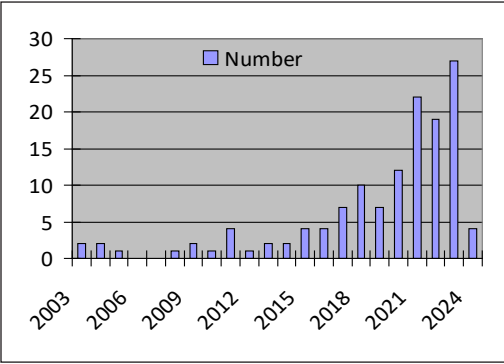
Figure 3. Metadata timeline

Research and Public Health, eight articles in *Sustainability*, five articles in *BMC Public Health*, five articles in the *Journal of Aging and Physical Activity*, five articles in *Urban Forestry and Urban Greening*, five articles in *Landscape and Urban Planning*. Additional publications were distributed across journals focusing on gerontology, urban ecology, and public health disciplines. As can be seen from these journals, interdisciplinary research has begun to take shape involving non-design-related journals, such as *BMC Public Health* and *the Journal of Aging and Physical Activity.*

RESULTS AND DISCUSSION

The research is divided into three phases, with the early research running from 2003 to around 2008, focusing on the correlation between environmental and health indicators and on walking in the neighbourhood, in addition to older adults exercising in parks for activities (Figure 4). In the second phase, from 2009 to 2018, the proximity of parks drew attention as a factor influencing physical activities

among seniors in both the neighbourhood and the natural environment. In the third phase, starting in 2019, studies focused on psychosocial factors. The conclusions about this were inconsistent and influenced by different cultural contexts. Meanwhile, in the post-COVID-19 pandemic, the relationship between physical activities and the environmental characteristics of older adults has been complemented by qualitative research. The increased ability of older adults to use smart electronic devices has led to more research directions and possibilities.

The exploration into the physical activities research for seniors gained momentum in 2003, triggering initial evaluations conducted in neighbourhoods and parks to identify suitable environments for senior exercise (Orsega-Smith et al., 2003). At the same time, research has found that park experience and its correlation with physical health indicators (Orsega-Smith et al., 2004). Studies also delved into how
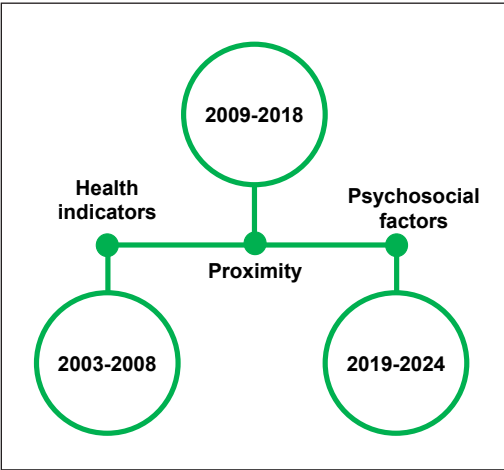
Figure 4. Research trends

street characteristics influence walking and physical activities (Borst et al., 2008; Hanibuchi et al., 2011). New techniques have emerged for studying features and walking activity, such as virtual observation with Google Street View (Christman et al., 2020).

The proximity of parks to residential areas was found to be linked with increased physical activities among seniors (Kaczynski et al., 2009, 2014; Ribeiro et al., 2015; Thornton et al., 2017). There has been a shift from an initial emphasis on seniors walking in neighbourhood environments to investigating how the naturally built environment within parks can promote physical activities (Costigan et al., 2017). Huang et al. (2018) have stated the crucial relationship between environmental dimensions and physical activities in older adults. The physical environment and the context influence the potential alternatives for parks and participation in park-based activities among older adults (Xie et al., 2018).

In Asian countries, park improvements have changed patterns of park use and physical activities among seniors (Arifwidodo & Chandrasiri, 2021). However, some studies emphasise that psychosocial factors are more influential on park activity levels than perceived park environments (R. Zhang, Duan et al., 2019). Factors such as ethnicity also contribute to variations in park usage, as evidenced (Vaughan et al., 2018). Additionally, Cohen et al. (2019) stated that park renovations have limited effects on seniors' physical

activities, as highlighted. Walking activities correlate with the built environment, and the environmental requirements of older adults vary due to differences in social factors (Gao & Nagai, 2021). This complements the idea of the role of psychosocial factors such as race in influencing park use.

In the aftermath of the COVID-19 pandemic, researchers have gained increased attention on the importance of green spaces for improving the quality of life of older adults (Carpentieri et al., 2020). For older adults, social networking and going to green spaces enhance each other (Enssle & Kabisch, 2020). Whereas previous studies have pointed out that activity has little to do with environmental characteristics, recent studies have shown that older adults' social activity involvement and environmental features are connected (Liu et al., 2020). Qualitative research complemented the relationship between environmental characteristics and older adults' activities (Lee & Ho, 2021; Veitch et al., 2020). A relationship has also been shown between community park design features and older adults' total steps taken and energy expenditure during park visits (Zhai et al., 2020). Older adults are more active in neighbourhoods where walking transportation is more favourable (Neto et al., 2021).

Walking activities correlate with the built environment, and the environmental requirements of older adults vary due to differences in social factors (Gao & Nagai, 2021). In the past three years, research on using new technologies such as social

media and computer virtual simulation has gradually increased. Many studies show the popularity of online surveys after the epidemic and the improvement of older adults' ability to use smart or electronic devices (Paudel et al., 2023).

Activities

The research variables related to the activities of older adults in urban parks were divided into six categories based on the literature retrieved (Figure 5). The largest number of activities were related to walking, with studies from Australia talking about walking as the preferred activity for older adults in parks (Veitch et al., 2020). Path width, more vegetation, and pet-friendly paths are associated with walking (Paydar et al., 2023). A study from Bulgaria noted that the better the quality of the park, the less time spent walking the dog, the worse the perceived health and the need for better park planning for dog walkers (Dzhambov, 2017). It is necessary to better plan parks for dog walkers. In Hong Kong, China, social connectedness is considered the most important criterion for park planning for older adults (Yung et al., 2017), while in Chengdu, China, the activities of older adults in parks differ significantly by gender (Y. Li et al., 2022). In addition to playing cards, a sedentary activity that has received significant attention, activities such as singing and Tai Chi are popular among older adults in parks. All have healing effects on the body and mind (Cai et al., 2023; B. Zhang & Huang, 2023). It can be seen from the above studies that the activities of older adults in parks vary greatly depending on their cultural background. Walking is popular among older adults as an important physical activity, so the path design of urban parks is more important. It is necessary to avoid conflicts between dog and non-dog walkers through design, clarify the scope of their respective activities, and promote social interaction between dog walkers. Activities with social interaction seem to be more popular among Chinese samples, and activities are affected by gender factors. Elderly people's preferred activities need to improve the situation of sitting for a long time. Studies have shown that social interaction is negatively correlated with walking and that older people tend to sit down when participating in social activities (Schmidt et al., 2019). Spaces for park activities need to be designed to combine physical activity and social interaction to meet the needs of older adults.

Characteristics and Activities

Existing research on characteristics and activities focuses on nine categories, including space types and factors affecting activities (Figure 6). The space types are natural and built environments, architecture, exercise space, paths, and recreational facilities. The factors are proximity, acoustics, renovation, and psychological factors.

Regardless of age, the park features most important to residents for park-based recreation are, in order of importance: well-maintained, sense of safety, relaxing atmosphere, accessibility, and greenery
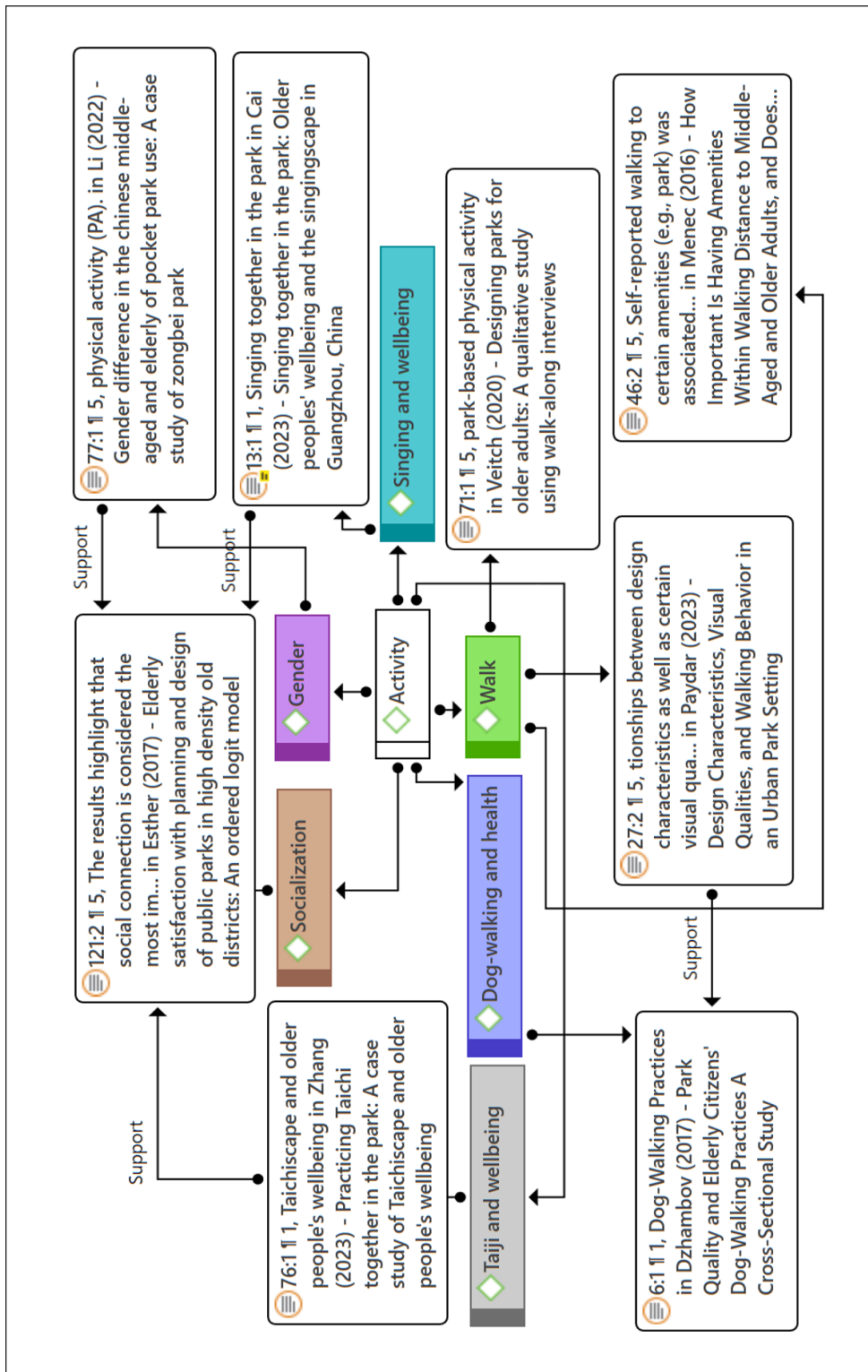
Figure 5. Activities of older adults in the park
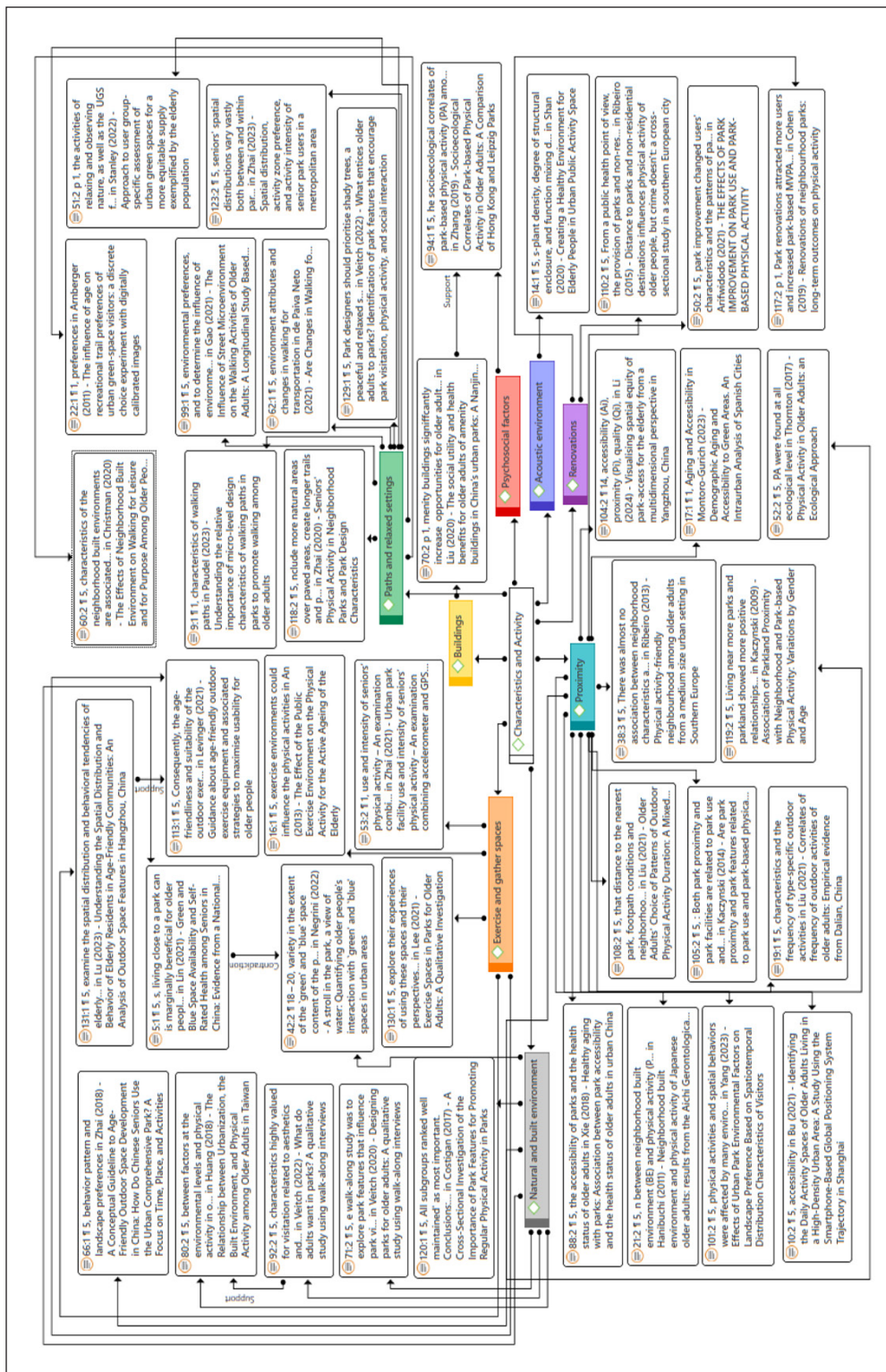
Figure 6. Characteristics and activity of older adults in parks

(Costigan et al., 2017). This is consistent with what is mentioned in Table 1. However, the concept of a relaxed atmosphere lacks a specific direction and needs further exploration in exploring parks for older adults. Samples from both different countries and the same country show that intergenerational conflict exists due to different park preferences between older adults and the young (Veitch et al., 2020, 2022; Zhai et al., 2018). As mentioned in Section 3.1, spaces that combine social interaction and physical activity can improve sedentary behaviour but may also introduce noise, such as square dancing (Zhou, 2014). There is a significant relationship between environmental factors and physical activities in older adults (Huang et al., 2018). However, this study only analyses from the perspective of built environment factors, such as urbanisation, land use classification, and income, and it is not clear what environmental characteristics promote physical activities for older adults. The use of green and blue spaces by older adults has aroused the interest of researchers, but the number of relevant studies is limited (Lin & Wu, 2021).

The gradient, length, shade of trees along the trail, and material are key features in path design that affect the activities of older adults (Christman et al., 2020; Mu et al., 2021; Paudel et al., 2023). Social psychological factors have an impact on the activities of older adults, and research should consider cultural background differences (Liu et al., 2020; R. Zhang, Duan, et al., 2019). Proximity and accessibility to parks

are also important variables influencing physical activities among older adults. In addition, factors such as park renovation and maintenance, exercise facilities, and acoustic environment are also important considerations for older adults' activities (Shan et al., 2020). Among them, the sound environment has received less attention, and this perspective has a certain impact on the health of the elderly.

Motivation

Research on older adults' motivations for using parks includes thermal comfort, place meaning, and social interaction (Figure 7). Thermal conditions can greatly affect activities related to space satisfaction and season (Ma et al., 2021). Psychological motivations like childhood experiences of nature, place attachment and connection with family are studied as factors influencing older adults' activities in urban parks. Social connectedness is considered an important criterion influencing park use among older adults (Jahangir, 2019; Luna et al., 2024; Son et al., 2022; Yung et al., 2017). Providing social spaces with natural elements, such as emphasising blue spaces in parks like riverfronts, can improve thermal comfort and attract older people to use them.

Characteristics and Perception

The main perceptions of older adults are psychological well-being, satisfaction, cognition, recovery, and environmental factors (Figure 8). In terms of restoration perceptions, the old parks have a higher level of naturalness and restorative experience
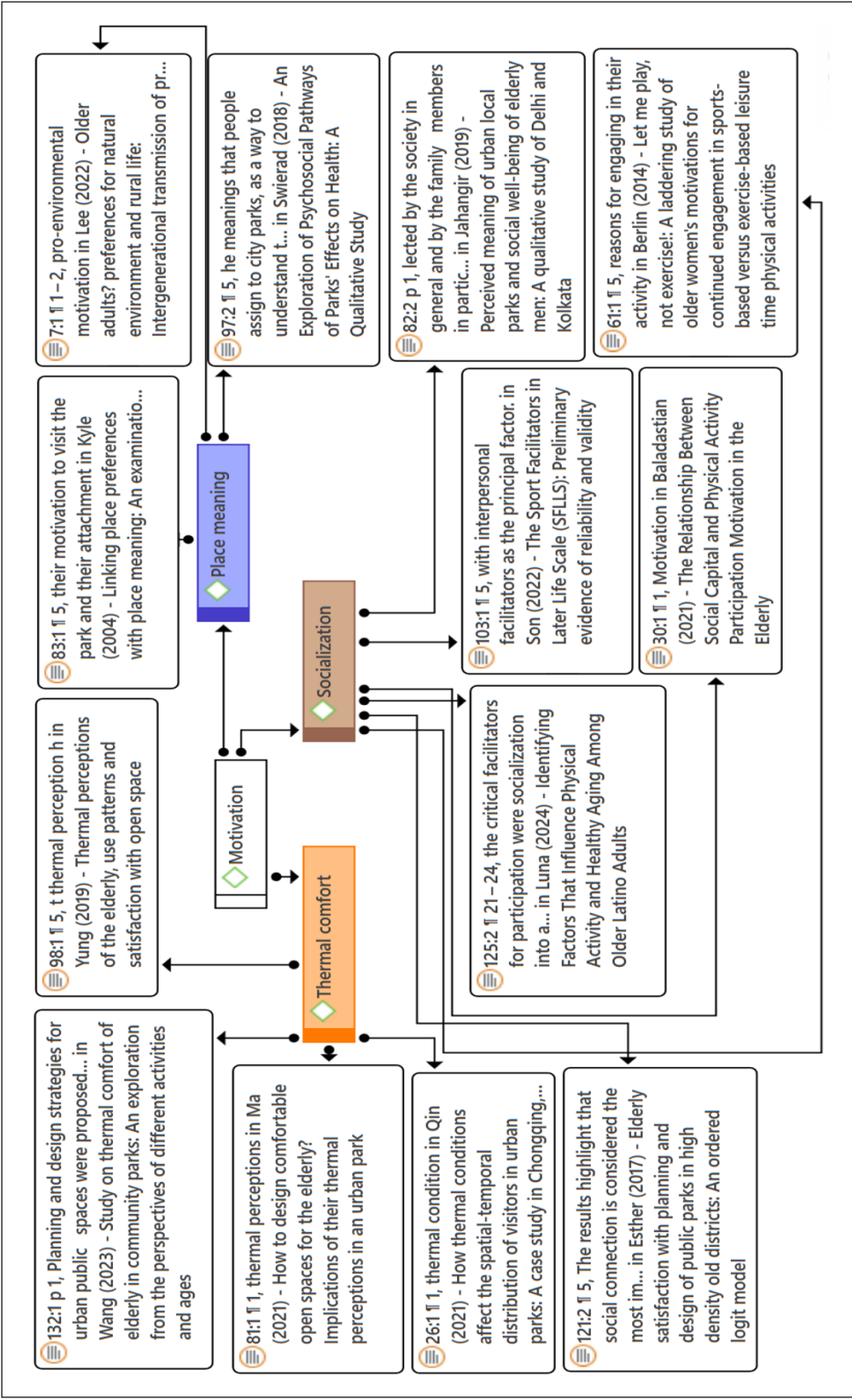
Figure 7. Motivation of older adults in parks
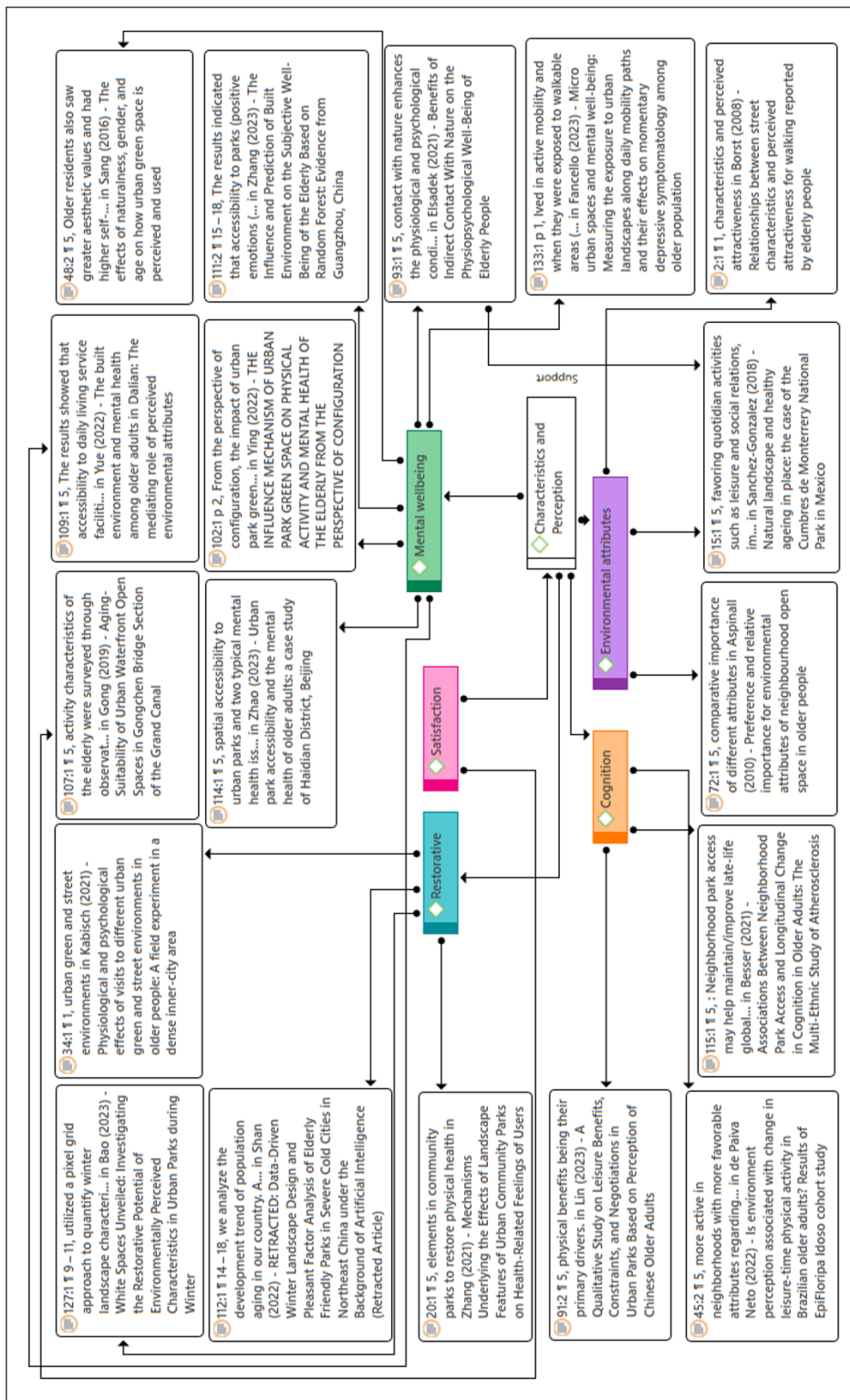
Figure 8. Characteristics and perception of older adults in parks

than streets, and their integration with sports activities has yet to be studied (Kabisch et al., 2021). Snowy parks, natural environments, and exercise areas all play a role in reducing stress (Bao et al., 2023; L. Zhang et al., 2021). It can be concluded that nature has a greater restorative effect than man-made landscapes, which are associated with psychological perceptions (Subiza-Pérez et al., 2020). However, this view needs to be further substantiated in older adults. As Schmidt et al. (2019) mentioned, walking in urban parks negatively correlates with social interaction. Because long periods of sedentary life are related to social interaction, promoting physical activity can increase attractiveness by adding natural elements, such as walking, which deserves further study.

Earlier research suggested that a greater sense of nature leads to increased levels of movement, aesthetic value, and self-reported well-being among locals who live close to green areas (Sang et al., 2016). Park accessibility contributes significantly to physical activities and well-being, mutually supporting the previous motivation (Y. Zhang et al., 2023). The importance of natural landscapes has also been proven (Fancello et al., 2023; Sanchez-Gonzalez et al., 2018).

CONCLUSION

The following conclusions and outlooks can be drawn by systematically reviewing and analysing the correlation between the physical activities and environmental factors of older adults in urban parks.

Firstly, there is a close correlation between physical activities and environmental factors in urban parks among older adults. Walking is the most popular activity for older adults in parks, and park design factors such as path width, vegetation, and pet-friendliness are crucial to promoting walking activities. For example, the width of the walking paths, the vegetation cover, and whether pets are allowed in the park all have an impact on the walking activities of older adults. Among them, vegetation coverage is related to a healthy, sound environment. The natural landscape in such parks has a positive effect on restoring health. In contrast, the role of artificial landscapes, such as buildings and squares, on the psychological variables of older adults needs to be further explored.

Secondly, the physical activities of older adults are affected by the physical environment and psychosocial factors. Older adults engage in a variety of types of physical activities, including walking, singing, and Tai Chi. The forms of activities for older adults vary greatly from region to region. As mentioned before, walking is a popular activity in different samples. Social activities are more popular in Chinese samples and are also affected by gender factors. Samples from different countries and the same country show an intergenerational conflict because the older adults' preference for parks is different from that of the younger generation. This suggests that the physical environment and psychosocial factors need to be considered comprehensively when planning and designing urban parks to better

meet older adults' activity needs. In addition to the motivations mentioned in the first part, the motivations for older adults to use parks include thermal comfort, place significance, and social interaction. This complements the earlier research that the nature sense brings more self-reported happiness. Providing space for social interaction needs further research, such as the connection between the space where physical activities occur and older adults' happiness.

This study contributes to the body of knowledge by integrating findings from the literature review with existing theoretical frameworks on physical activity and environmental factors in urban parks, particularly for older adults. First, this study extends affordance theory by showing how these environmental affordances are shaped by cultural preferences and psychosocial factors, indicating that affordances are not universally perceived but are modulated by cultural and social contexts. Furthermore, the findings extend Attention Restoration Theory (R. Kaplan & Kaplan, 1989), emphasising the role of natural environments in promoting psychological well-being. However, our study also reveals that artificial nature landscapes may have a less consistent effect. It highlights how older adults' engagement in physical activities is shaped not only by the physical environment but also by gender differences, social dynamics, and intergenerational conflicts. These findings suggest that theories of environmental behaviour should further incorporate the psychosocial dimensions

of ageing populations to better explain the complexities of park use among older adults.

The limitations of this study are that, first, the search strategy may have missed relevant studies due to limited search terms or databases. Second, the quality of the included studies varied, which may affect the reliability of the findings. Finally, including only English literature may have missed urban park studies in other cultural contexts.

Future research can further delve into the specific mechanisms of action between environmental factors and the physical activities of older adults. For example, experimental or quasi-experimental designs can be used to measure and assess more accurately the physical activities and environmental factors of older adults using new technological tools and to explore the direct effects of park design features on older adults' activity behaviours, as well as how these effects are mediated through psychological, social factors. Future research could also focus on the relationship between physical activities and environmental factors among older adults in different cultural contexts. The cross-cultural study may yield a more thorough reference for the design and development of urban parks as well as a greater knowledge of the connection between physical activity and environmental characteristics of older adults.

REFERENCES

Arifwidodo, S. D., & Chandrasiri, O. (2021). The effects of park improvement on park use and park-based physical activity. *Journal of Architecture and Urbanism*, *45*(1), 73-79. https://doi.org/10.3846/jau.2021.11845

Bai, H., Stanis, S. A. W., Kaczynski, A. T., & Besenyi, G. M. (2013). Perceptions of neighborhood park quality: Associations with physical activity and body mass index. *Annals of Behavioral Medicine*, *45*(SUPPL.1), S39-S48. https://doi.org/10.1007/s12160-012-9448-4

Bao, Y., Gao, M., Zhao, C., & Zhou, X. (2023). White spaces unveiled: Investigating the restorative potential of environmentally perceived characteristics in urban parks during winter. *Forests*, *14*(12), Article 2329. https://doi.org/10.3390/f14122329

Barnett, D. W., Barnett, A., Nathan, A., Van Cauwenberg, J., & Cerin, E. (2017). Built environmental correlates of older adults' total physical activity and walking: A systematic review and meta-analysis. *International Journal of Behavioral Nutrition and Physical Activity*, *14,* Article 103. https://doi.org/10.1186/s12966-017-0558-z

Battaglia, G., Giustino, V., Messina, G., Faraone, M., Brusa, J., Bordonali, A., Barbagallo, M., Palma, A., & Dominguez, L.-J. (2020). Walking in natural environments as geriatrician's recommendation for fall prevention: Preliminary outcomes from the "passiata day" model. *Sustainability, 12*(7), Article 2684. https://doi.org/10.3390/su12072684

Bohari, A. A. M., Julaihi, F. A., Kipli, K., Azman, M. A., Amirul, S. R., & Hu, X. (2024). Retirement village design features: Generation X's expectation. *Pertanika Journal of Social Sciences and Humanities*, *32*(2), 675-701. https://doi.org/10.47836/pjssh.32.2.15

Bonaccorsi, G., Manzi, F., Del Riccio, M., Setola, N., Naldi, E., Milani, C., Giorgetti, D., Dellisanti, C., & Lorini, C. (2020). Impact of the built environment and the neighborhood in promoting the physical activity and the healthy aging in older people: An umbrella review. *International Journal of Environmental Research and Public Health*, *17*(17), Article 6127. https://doi.org/10.3390/ijerph17176127

Borst, H. C., Miedema, H. M. E., de Vries, S. I., Graham, J. M. A., & van Dongen, J. E. F. (2008). Relationships between street characteristics and perceived attractiveness for walking reported by elderly people. *Journal of Environmental Psychology*, *28*(4), 353-361. https://doi.org/10.1016/j.jenvp.2008.02.010

Braun, V., & Clarke, V. (2013). *Successful qualitative research: A practical guide for beginners.* SAGE Publications

Cai, X., Huang, Y., & Zhang, B. (2023). Singing together in the park: Older peoples' wellbeing and the singingscape in Guangzhou, China. *Emotion Space and Society*, *47*, Article 100947. https://doi.org/10.1016/j.emospa.2023.100947

Carpentieri, G., Guida, C., Fevola, O., & Sgambati, S. (2020). The Covid-19 pandemic from the elderly perspective in urban areas: An evaluation of urban green areas in ten European capitals. *TeMA Journal of Land Use, Mobility, and Environment*, *13*(3), 389-408. https://doi.org/10.6092/1970-9870/7007

Chenghe, G., Keith, M., & Hong, A. (2019). Designing walkable cities and neighborhoods in the era of urban big data. *Urban Planning International*, *34*(5), 9-15.

Christman, Z. J., Wilson-Genderson, M., Heid, A., & Pruchno, R. (2020). The effects of neighborhood built environment on walking for leisure and for purpose among older people. *The Gerontologist*, *60*(4), 651-660. https://doi.org/10.1093/geront/gnz093

Cohen, D. A., Han, B., Isacoff, J., Shulaker, B., & Williamson, S. (2019). Renovations of neighbourhood parks: Long-term outcomes on physical activity. *Journal of Epidemiology and Community Health*, *73*, 214-218. https://doi.org/10.1136/jech-2018-210791

Collins, K., Layne, K., Schooley, M., Chase, L., & Faradj-Bakht, S. (2021). Fitness in the park an interprofessional community-based partnership for older adults. *Topics in Geriatric Rehabilitation, 37*(3), 186-190. https://doi.org/10.1097/TGR.0000000000000327

Costigan, S. A., Veitch, J., Crawford, D., Carver, A., & Timperio, A. (2017). A cross-sectional investigation of the importance of park features for promoting regular physical activity in parks. *International Journal of Environmental Research and Public Health*, *14*(11), Article 1335. https://doi.org/10.3390/ijerph14111335

Dzhambov, A. M. (2017). Park quality and elderly citizens' dog-walking practices a cross-sectional study. *Society & Animals*, *25*(2), 119-143. https://doi.org/10.1163/15685306-12341438

Enssle, F., & Kabisch, N. (2020). Urban green spaces for the social interaction, health and well-being of older people— An integrated view of urban ecosystem services and socio-environmental justice. *Environmental Science and Policy*, *109*, 36-44. https://doi.org/10.1016/j.envsci.2020.04.008

Fancello, G., Vallée, J., Sueur, C., van Lenthe, F. J., Kestens, Y., Montanari, A., & Chaix, B. (2023). Micro urban spaces and mental well-being: Measuring the exposure to urban landscapes along daily mobility paths and their effects on momentary depressive symptomatology among older population. *Environment International*, *178*, Article 108095. https://doi.org/10.1016/j.envint.2023.108095

Gao, W., & Nagai, Y. (2021). The influence of street microenvironment on the walking activities of older adults: A longitudinal study based on the structural equation model and manipulated photos. *Social Sciences*, *10*(12), Article 451. https://doi.org/10.3390/socsci10120451

Gibson, J. J. (1986). The theory of affordances. In *The Ecological Approach to Visual Perception* (pp. 119-135). Erlbaum. (Original work published 1979)

Han, B., Li, D., & Chang, P. (2021). The effect of place attachment and greenway attributes on well-being among older adults in Taiwan. *Urban Forestry & Urban Greening*, *65*, Article 127306. https://doi.org/10.1016/j.ufug.2021.127306

Hanibuchi, T., Kawachi, I., Nakaya, T., Hirai, H., & Kondo, K. (2011). Neighborhood built environment and physical activity of Japanese older adults: Results from the Aichi Gerontological Evaluation Study (AGES). *BMC Public Health, 11*, Article 657. https://doi.org/10.1186/1471-2458-11-657

Huang, N.-C., Kung, S.-F., & Hu, S. C. (2018). The relationship between urbanization, the built environment, and physical activity among older adults in Taiwan. *International Journal of Environmental Research and Public Health*, *15*(5), Article 836. https://doi.org/10.3390/ijerph15050836

Jahangir, S. (2019). Perceived meaning of urban local parks and social well-being of elderly men: A qualitative study of Delhi and Kolkata. *Transactions of the Institute of Indian Geographers*, *41*(1), 81-89.

Kabisch, N., Pueffel, C., Masztalerz, O., Hemmerling, J., & Kraemer, R. (2021). Physiological and psychological effects of visits to different

urban green and street environments in older people: A field experiment in a dense inner-city area. *Landscape and Urban Planning*, *207*, Article 103998. https://doi.org/10.1016/j.landurbplan.2020.103998

Kaczynski, A. T., Besenyi, G. M., Stanis, S. A. W., Koohsari, M. J., Oestman, K. B., Bergstrom, R., Potwarka, L. R., & Reis, R. S. (2014). Are park proximity and park features related to park use and park-based physical activity among adults? Variations by multiple socio-demographic characteristics. *International Journal of Behavioral Nutrition and Physical Activity*, *11*, Article 146. https://doi.org/10.1186/s12966-014-0146-4

Kaczynski, A. T., & Henderson, K. A. (2007). Environmental correlates of physical activity: A review of evidence about parks and recreation. *Leisure Sciences*, *29*(4), 315-354. https://doi.org/10.1080/01490400701394865

Kaczynski, A. T., Potwarka, L. R., Smale, B. J. A., & Havitz, M. E. (2009). Association of parkland proximity with neighborhood and park-based physical activity: Variations by gender and age. *Leisure Sciences*, *31*(2), 174-191. https://doi.org/10.1080/01490400802686045

Kaplan, R., & Kaplan, S. (1989). *The experience of nature: A psychological perspective.* Cambridge University Press.

Kaplan, S. (1995). The restorative benefits of nature: Toward an integrative framework. *Journal of Environmental Psychology*, *15*(3), 169-182. https://doi.org/10.1016/0272-4944(95)90001-2

Killingsworth, R., Earp, J., Moore, R., & Arch, D. (2003). Supporting health through design: Challenges and opportunities. *American Journal of Health Promotion*, *18*(1), 1-2. https://doi.org/10.4278/0890-1171-18.1.1

King, D. K., Litt, J., Hale, J., Burniece, K. M., & Ross, C. (2015). "The park a tree built": Evaluating how a park development project impacted where

people play. *Urban Forestry & Urban Greening*, *14*(2), 293-299. https://doi.org/10.1016/j.ufug.2015.02.011

Lawton, M. P., & Nahemow, L. (1973). Ecology and the aging process. In C. Eisdorfer & M. P. Lawton (Eds.), *The psychology of adult development and aging* (pp. 619-674). American Psychological Association. https://doi.org/10.1037/10044-020

Lee, J. L. C., & Ho, R. T. H. (2021). Exercise spaces in parks for older adults: A qualitative investigation. *Journal of Aging and Physical Activity*, *29*(2), 233-241. https://doi.org/10.1123/japa.2019-0397

Levy-Storms, L., Chen, L., & Loukaitou-Sideris, A. (2018). Older adults' needs and preferences for open space and physical activity in and near parks: A systematic review. *Journal of Aging and Physical Activity*, *26*(4), 682-696. https://doi.org/10.1123/japa.2016-0354

Li, D., Xu, H., Kang, Y., & Steemers, K. (2023). Systematic review: Landscape characteristics correlated with physical activity of the elderly people. *Land*, *12*(3), Article 605. https://doi.org/10.3390/land12030605

Li, Y., Niu, S., & Mou, Y. (2022). Gender difference in the chinese middle-aged and elderly of pocket park use: A case study of zongbei park. *Frontiers in Environmental Science*, *10*, Article 978935. https://doi.org/10.3389/fenvs.2022.978935

Lin, C., & Wu, L. (2021). Green and blue space availability and self-rated health among seniors in China: Evidence from a national survey. *International Journal of Environmental Research and Public Health*, *18*(2), Article 545. https://doi.org/10.3390/ijerph18020545

Liu, B., Chen, Y., & Xiao, M. (2020). The social utility and health benefits for older adults of amenity buildings in China's urban parks: A Nanjing case study. *International Journal of Environmental Research and Public Health*, *17*(20), Article 7497. https://doi.org/10.3390/ijerph17207497

Luna, E., Springer, A., Herrera, D., Garcia, M. E., Brown, L., & Kelder, S. H. (2024). Identifying factors that influence physical activity and healthy aging among older Latino adults. *Health Education & Behavior, 51*(5), 700-709. https://doi.org/10.1177/10901981241228221

Ma, X., Tian, Y., Du, M., Hong, B., & Lin, B. (2021). How to design comfortable open spaces for the elderly? Implications of their thermal perceptions in an urban park. *Science of The Total Environment*, *768*, Article 144985. https://doi.org/10.1016/j.scitotenv.2021.144985

McCormack, G. R., Rock, M., Toohey, A. M., & Hignell, D. (2010). Characteristics of urban parks associated with park use and physical activity: A review of qualitative research. *Health & Place*, *16*(4), 712-726. https://doi.org/10.1016/j.healthplace.2010.03.003

Mu, B., Liu, C., Mu, T., Xu, X., Tian, G., Zhang, Y., & Kim, G. (2021). Spatiotemporal fluctuations in urban park spatial vitality determined by on-site observation and behavior mapping: A case study of three parks in Zhengzhou City, China. *Urban Forestry and Urban Greening*, *64*, Article 127246. https://doi.org/10.1016/j.ufug.2021.127246

Neto, F. T. D., Arins, G. C. B., D'Orsi, E., & Rech, C. R. (2021). Are changes in walking for transportation in Brazilian older adults associated with attributes of the neighborhood environment? *Journal of Aging and Physical Activity*, *29*(4), 686-694. https://doi.org/10.1123/japa.2020-0120

Orsega-Smith, E., Mowen, A. J., Payne, L. L., & Godbey, G. (2004). The interaction of stress and park use on psycho-physiological health in older adults. *Journal of Leisure Research*, *36*(2), 232-256. https://doi.org/10.1080/00222216.2004.11950021

Orsega-Smith, E., Payne, L. L., & Godbey, G. (2003). Physical and psychosocial characteristics of older adults who participate in a community-based exercise program. *Journal of Aging and Physical Activity*, *11*(4), 516-531. https://doi.org/10.1123/japa.11.4.516

Paudel, C., Timperio, A., Loh, V., Deforche, B., Salmon, J., & Veitch, J. (2023). Understanding the relative importance of micro-level design characteristics of walking paths in parks to promote walking among older adults. *Urban Forestry \& Urban Greening*, *89,* Article 128129. https://doi.org/10.1016/j.ufug.2023.128129

Paydar, M., Fard, A. K., & Navarrete, V. G. (2023). Design characteristics, visual qualities, and walking behavior in an urban park setting. *Land*, *12*(10), Article 1838. https://doi.org/10.3390/land12101838

Pratiwi, P. I., Xiang, Q. Y., & Furuya, K. (2020). Physiological and psychological effects of walking in urban parks and its imagery in different seasons in middle-aged and older adults: Evidence from Matsudo City, Japan. *Sustainability*, *12*(10), Article 4003. https://doi.org/10.3390/su12104003

Ribeiro, A. I., Pires, A., Carvalho, M. S., & Pina, M. F. (2015). Distance to parks and non-residential destinations influences physical activity of older people, but crime doesn't: A cross-sectional study in a southern European city. *BMC Public Health*, *15*, Article 593. https://doi.org/10.1186/s12889-015-1879-y

Sallis, J. F., Cervero, R. B., Ascher, W., Henderson, K. A., Kraft, M. K., & Kerr, J. (2006). An ecological approach to creating active living communities. *Annual Review of Public Health*, *27*, 297-322. https://doi.org/10.1146/annurev.publhealth.27.021405.102100

Sanchez-Gonzalez, D., Adame Rivera, L. M., & Rodriguez-Rodriguez, V. (2018). Natural landscape and healthy ageing in place: the case of the Cumbres de Monterrery National Park in Mexico. *Boletin De La Asociacion De Geografos Espanoles*, *76*, 20-51. https://doi.org/10.21138/bage.2514

Sang, Å. O., Knez, I., Gunnarsson, B., & Hedblom, M. (2016). The effects of naturalness, gender, and age on how urban green space is perceived and used. *Urban Forestry & Urban Greening, 18*, 268-276. https://doi.org/10.1016/j.ufug.2016.06.008

Schmidt, T., Kerr, J., & Schipperijn, J. (2019). Associations between neighborhood open space features and walking and social interaction in older adults-a mixed methods study. *Geriatrics (Switzerland)*, *4*(3), Article 41. https://doi.org/10.3390/geriatrics4030041

Shan, W., Xiu, C., & Ji, R. (2020). Creating a healthy environment for elderly people in urban public activity space. *International Journal of Environmental Research and Public Health*, *17*(19), Article 7301. https://doi.org/10.3390/ijerph17197301

Son, J., West, S., Liechty, T., Janke, M., Juris, J., & Wong, J. (2022). The sport facilitators in later life scale (SFLLS): Preliminary evidence of reliability and validity. *Journal of Leisure Research*, *53*(4), 643-666. https://doi.org/10.1080/00222216.2021.1998813

Subiza-Pérez, M., Vozmediano, L., & San Juan, C. (2020). Welcome to your plaza: Assessing the restorative potential of urban squares through survey and objective evaluation methods. *Cities*, *100*, Article 102461. https://doi.org/10.1016/j.cities.2019.102461

Sun, W., & Yu, B. (2021). Study on the influences of community park environment on health behavior activities of the floating elderly. *Landscape Architecture*, *5*(28), 86-91. https://doi.org/10.14085/j.fjyl.2021.05.0086.06

Thornton, C. M., Kerr, J., Conway, T. L., Saelens, B. E., Sallis, J. F., Ahn, D. K., Frank, L. D., Cain, K. L., & King, A. C. (2017). Physical activity in older adults: an ecological approach. *Annals of Behavioral Medicine*, *51*(2), 159-169. https://doi.org/10.1007/s12160-016-9837-1

Ulrich, R. S., Simonst, R. F., Lositot, B. D., Fioritot, E., Milest, M. A., & Zelsont, M. (1991). Stress recovery during exposure to natural and urban environments. *Journal of Environmental Psychology*, *11*(3), 201-230. https://doi.org/10.1016/S0272-4944(05)80184-7

Van Cauwenberg, J., De Bourdeaudhuij, I., De Meester, F., Van Dyck, D., Salmon, J., Clarys, P., & Deforche, B. (2011). Relationship between the physical environment and physical activity in older adults: A systematic review. *Health and Place*, *17*(2), 458-469. https://doi.org/10.1016/j.healthplace.2010.11.010

Van Cauwenberg, J., Nathan, A., Barnett, A., Barnett, D. W., & Cerin, E. (2018). Relationships between neighbourhood physical environmental attributes and older adults' leisure-time physical activity: A systematic review and meta-analysis. *Sports Medicine*, *48*, 1635-1660. https://doi.org/10.1007/s40279-018-0917-1

Vaughan, C. A., Cohen, D. A., & Han, B. (2018). How do racial/ethnic groups differ in their use of neighborhood parks? Findings from the national study of neighborhood parks. *Journal of Urban Health-Bulletin of The New York Academy of Medicine*, *95*, 739-749. https://doi.org/10.1007/s11524-018-0278-y

Veitch, J., Biggs, N., Deforche, B., & Timperio, A. (2022). What do adults want in parks? A qualitative study using walk-along interviews. *BMC Public Health 22*, Article 753. https://doi.org/10.1186/s12889-022-13064-5

Veitch, J., Flowers, E., Ball, K., Deforche, B., & Timperio, A. (2020). Designing parks for older adults: A qualitative study using walk-along interviews. *Urban Forestry and Urban Greening*, *54*, Article 126768. https://doi.org/10.1016/j.ufug.2020.126768

Wagner, P., Duan, Y. P., Zhang, R., Wulff, H., & Brehm, W. (2020). Association of psychosocial and perceived environmental factors with

park-based physical activity among elderly in two cities in China and Germany. *BMC Public Health*, *20*, Article 55. https://doi.org/10.1186/s12889-019-8140-z

Wang, K., Xu, H., & Zhao, Y. (2021). Seasonal retired immigrants' dailyactivities, health and wellbeing: Analysis of exposure to green space in destination. *Human Geography*, *36*(1), 39. https://doi.org/10.13959/j.issn.1003-2398.2021.01.006

Wang, M., Qiu, M., Chen, M., Zhang, Y., Zhang, S., & Wang, L. (2021). How does urban green space feature influence physical activity diversity in high-density built environment? An on-site observational study. *Urban Forestry & Urban Greening*, *62*, Article 127129. https://doi.org/10.1016/j.ufug.2021.127129

Xie, B., An, Z. H., Zheng, Y. L., & Li, Z. G. (2018). Healthy aging with parks: Association between park accessibility and the health status of older adults in urban China. *Sustainable Cities and Society*, *43*, 476-486. https://doi.org/10.1016/j.scs.2018.09.010

Yung, E. H. K., Winky K. O. H., & Chan, E. H. W. (2017). Elderly satisfaction with planning and design of public parks in high density old districts: An ordered logit model. *Landscape and Urban Planning*, *165*, 39-53. https://doi.org/10.1016/j.landurbplan.2017.05.006

Zairul, M. (2020). A thematic review on student-centred learning in the studio education. *Journal of Critical Reviews*, *7*(2), 504-511.

Zhai, Y. [Yang]., Li, K., & Liu, J. (2018). A conceptual guideline to age-friendly outdoor space development in China: How do Chinese seniors use the urban comprehensive park? A focus on time, place, and activities. *Sustainability*, *10*(10), Article 3678. https://doi.org/10.3390/su10103678

Zhai, Y. [Yujia], Li, D. Y., Wang, D., & Shi, C. (2020). Seniors' physical activity in neighborhood parks and park design characteristics. *Frontiers in Public Health*, *8,* Article 322. https://doi.org/10.3389/fpubh.2020.00322

Zhang, B., & Huang, Y. (2023). Practicing Taichi together in the park: A case study of Taichiscape and older people's wellbeing. *Population, Space and Place*, *29*(8), Article e2696. https://doi.org/10.1002/psp.2696

Zhang, L., Liu, S., & Liu, S. (2021). Mechanisms underlying the effects of landscape features of urban community parks on health-related feelings of users. *International Journal of Environmental Research and Public Health*, *18*(15), Article 7888. https://doi.org/10.3390/ijerph18157888

Zhang, R., Duan, Y., Brehm, W., & Wagner, P. (2019). Socioecological correlates of park-based physical activity in older adults: A comparison of Hong Kong and Leipzig Parks. *International Journal of Environmental Research and Public Health*, *16*(17), Article 3048. https://doi.org/10.3390/ijerph16173048

Zhang, R., Wulff, H., Duan, Y., & Wagner, P. (2019). Associations between the physical environment and park-based physical activity: A systematic review. *Journal of Sport and Health Science*, *8*(5), 412-421. https://doi.org/10.1016/j.jshs.2018.11.002

Zhang, Y., Luo, H., Xie, J., Meng, X., & Ye, C. (2023). The influence and prediction of built environment on the subjective well-being of the elderly based on random forest: Evidence from Guangzhou, China. *Land*, *12*(10), Article 1940. https://doi.org/10.3390/land12101940

Zhou, L. (2014). Music is not our enemy, but noise should be regulated: Thoughts on shooting/conflicts related to Dama Square Dance in China. *Research Quarterly For Exercise and Sport*, *85*(3), 279-281. https://doi.org/10.1080/02701367.2014.935153

The Relationship between Financial Literacy and Entrepreneurship Spirit with Mediating Effect of Personal Financial Management

Noor Lela Ahmad*, Nadiah Farhanah Mohamad Fazil and Rohaila Yusof

Department of Accounting and Finance, Faculty of Management and Economics, Universiti Pendidikan Sultan Idris, 35900 Tanjong Malim, Perak, Malaysia

ABSTRACT

The study is designed to examine the relationship between accounting undergraduates' financial literacy (financial knowledge, financial attitude, and financial behavior) and their entrepreneurship spirit, with mediating effects of personal financial management (saving, investment, money attitude and wealth accumulation). A quantitative method was employed, and an adapted questionnaire was administered to accounting undergraduates in seven public universities across Malaysia. The Theory of Planned Behavior (TPB) serves as the underlying theory for explaining how financial literacy and personal financial management influence the entrepreneurship spirit. A sample of 756 responses was gathered through simple random sampling, and Structural Equation Modeling (SEM) was used to analyze the data. Findings from the path analysis indicated that there was no significant relationship between accounting undergraduates' financial literacy and entrepreneurial spirit. However, personal financial management fully mediated the relationship between financial literacy and entrepreneurship spirit. Strong and meaningful relationships were identified between financial literacy and personal financial management, including personal financial management and entrepreneurship spirit. This insight suggests that TPB could be enhanced by including mediating variables like personal financial management to better capture the mechanisms linking financial literacy to entrepreneurial spirit. Thus, the findings indicate that a higher level of financial literacy can shape better personal financial management among the youth and may instill their entrepreneurial spirit. Higher education institutions, educators, and policymakers can leverage this finding to develop a more integrated curriculum and effective policies that enhance students' entrepreneurial spirit.

INTRODUCTION

Entrepreneurship has been acknowledged worldwide as a significant solution that can resolve arising and ongoing issues. It serves an essential function in stimulating economic advancement (Hassan et al., 2020; Stoica et al., 2020), which can, at the same time, help reduce rates of unemployment since new venture creation creates more job opportunities. Despite its importance and advantages, becoming an entrepreneur is not popular among individuals, especially among the youth. In fact, the youth are more eager to fill vacant positions within government institutions (Hassan et al., 2020), including the private sector, which indicates their disinterest in venturing into entrepreneurship. Recent studies have also shown that Malaysian youth are increasingly reluctant to pursue entrepreneurship, believing they are not suited for such careers (Aligishiev & Gravesteijn, 2020). This may have to do with their lack of skills to become successful entrepreneurs.

Financial skills are essential when it comes to setting up a new business, and it becomes especially imperative to secure its long-term viability (Isomidinova et al., 2017; Ripain et al., 2017). Furthermore, being financially literate allows entrepreneurs to effectively manage business finances in terms of budgeting and managing financial and credit risks (Suparno & Saptono, 2018), ensuring financial resources are utilized effectively and strategically. This emphasizes that financial literacy is an essential skill that entrepreneurs need to be equipped with to be successful in the long run. Empirical research underscores the strong connection between financial literacy and entrepreneurial success. In Malaysia, individuals possessing higher financial literacy are more prone to undertake entrepreneurial ventures and effectively oversee their business finances. This suggests that increasing financial literacy can contribute to better entrepreneurial performance (Rehman & Mia, 2024).

However, recent statistics reported that Malaysians' financial literacy is relatively low. The 2018 Malaysian Credit Counselling and Debt Management (AKPK) report suggests that working adults in Malaysia were unsure of the appropriate amount to save, showing their difficulties in managing financial planning. Bank Negara's Financial Capability and Inclusion Demand Side Survey in 2018 also depicted Malaysians' low level of financial literacy, where it was highlighted that Malaysians struggled to plan and save for both retirement funds and emergency funds of one thousand ringgit.

The youth in the country also exhibited a low level of financial literacy, as the Malaysian Department of Insolvency (MDI, 2019) reported that 22 percent of bankruptcy cases in 2019 involved young people. Furthermore, the youth in the country struggle with a lack of financial knowledge and are heavily weighed down by debt (Murugiah, 2016). Research indicates that financial literacy levels among Malaysian youth remain concerning. Despite various financial education initiatives, many young adults struggle with personal financial management, leading to high debt levels and poor savings. This financial fragility hinders their ability to engage confidently in

entrepreneurship (Rehman & Mia, 2024). These statistics raise concerns for the financial well-being of individuals in the country and impede potential entrepreneurs from emerging in the nation. Hence, the financial literacy of young people should be amplified to ensure they are financially competent in managing their personal finances, which could instill confidence to start and manage a business.

Heightened financial literacy levels may ignite entrepreneurial spirits, which can be beneficial for the nation, especially during times when rates of unemployment are rising. The 2018 Graduate Tracer Study Report found that nearly 60 percent of undergraduates in Malaysia remained unemployed a year after graduation, with the rate anticipated to rise due to the COVID-19 pandemic (Abd Rahman et al., 2020). Yet, this could be averted if the youth dive into entrepreneurship since it can create more job opportunities and reduce the unemployment rates among the youth. Expanding entrepreneurship would contribute to Malaysia's vision of becoming an entrepreneurial nation by 2030. This research seeks to ignite the entrepreneurial spirit among youth by enhancing their financial capabilities. The entrepreneurial spirit delves into the intrinsic motivation and mindset that drive entrepreneurial behavior. Therefore, this study aims to explore the connection between financial literacy and entrepreneurial spirit, focusing on the role of personal financial management as a mediator.

LITERATURE REVIEW

Financial Literacy and Entrepreneurship Spirit

Entrepreneurship is establishing a new business venture (Kloepfer & Castrogiovanni, 2018). According to Malaysia's National Entrepreneurship Policy 2030 (NEP 2030), it is an essential part of the economic growth of a country since it contributes to an increase in GDP, stimulates investments and provides a platform for the creation of more job opportunities (Ministry of Entrepreneur Development and Cooperatives [MEDAC], 2019). Entrepreneurship also results in the development of innovation since the nature of entrepreneurship is linked to creativity and innovativeness. The NEP 2030 outlines various initiatives and programs aimed at helping Malaysia achieve its goal of becoming a leading entrepreneurial nation by 2030. Regardless, this becomes challenging since the effort requires improvement in multiple aspects, such as culture and mindset, fund access, technology, education, skills, and many more (MEDAC, 2019). The policy highlights both internal and external challenges faced by entrepreneurs. However, it has been noted that the economic success of entrepreneurs is largely driven by personal effort and skills. Thus, an enhanced level of entrepreneurial spirit needs to be developed for them to be sustainable on top of being successful.

Financial literacy encompasses a range of elements, including financial knowledge, skills, awareness, attitude, and behavior, all of which are vital for making informed financial decisions that contribute

to financial well-being (Atkinson & Messy, 2012). According to Zaimovic et al. (2023), financial literacy is a blend of awareness, knowledge, skills, attitudes, and behaviors essential for making informed financial decisions and improving individual financial well-being. This definition integrates various dimensions of financial literacy into financial security and overall economic progress.

Based on the definition, three dimensions of financial literacy were identified to measure financial literacy: financial knowledge, financial attitude, and financial behavior. Financial knowledge encompasses a person's awareness of fundamental financial principles and ability to use numerical skills in financial decision-making (Atkinson & Messy, 2012). Financial attitude is the perception of and how one feels about financial matters and is usually viewed positively or negatively. Financial behavior relates to how one undertakes or acts in financial transactions (Kadoya & Khan, 2020). The three elements make up financial literacy since knowledge, perception, and action are significant in making informed financial choices.

Financial literacy plays a critical role in influencing the performance of an entrepreneur (Li & Qian, 2019; Usama & Yusoff, 2018). Entrepreneurs with sound financial literacy tend to effectively utilize financial resources, including taking advantage of financial services to continuously improve their business performance (Fatoki, 2014). The business will also benefit from effective financial forecasts, enabling it to dive into advantageous business opportunities and

obtain skyrocketing profits (Adomako & Danso, 2014). Essentially, it can be said that financial literacy is one of the contributing factors to a successful business performance. Consistent with this, possessing sound financial literacy may also ignite the entrepreneurial spirit of an individual since it instills confidence that their business will eventually become successful.

Across the literature, the link between financial literacy and entrepreneurship spirit has been established globally and locally (Ahmad et al., 2021). Ahmad et al. (2021) revealed that the entrepreneurial motivation of accounting students is affected by financial literacy and financial behavior. Oggero et al. (2020) discovered a strong positive correlation between financial literacy and the entrepreneurial spirit of men in Italy, while the entrepreneurial spirit of women was more affected by contextual factors. In China, entrepreneurship participation and performance were significantly affected by financial literacy (Li & Qian, 2019), indicating the development of entrepreneurial intent through financial literacy. Meanwhile, Pakistani youth's entrepreneurial intent was positively impacted by their financial attitude and financial knowledge (Bilal et al., 2020). A study in Turkey found that the relationship between youth's entrepreneurial intention and financial attitude, as well as financial behavior, was significant and that financial knowledge would only impact their entrepreneurship intention when converted into their attitude or behavior. Findings across the globe confirm that financial literacy has a positive and significant link with the spirit of entrepreneurship. In addition, financial knowledge, financial

behavior, and attitude each play their role in representing financial literacy and prove their significance in developing entrepreneurial spirit.

A different study found that entrepreneurship education and financial support strongly influence youth entrepreneurial attitude, which drives their intention to become entrepreneurs (Hassan et al., 2020). Although the results insinuate that youth would be more entrepreneurially inclined with the availability of financial means, the authors emphasized that they would have to realize the responsibility of providing a return on investment for the investors. Due to this, sound financial literacy is required to effectively utilize the financial resources received to gain profit and lead the business to success. Overall, the findings from both local and global contexts portray the significance of financial literacy in shaping entrepreneurial spirit, attitude, intention, and behavior. Although there is no defining study that suggests financial literacy can ignite one's entrepreneurship spirit in Malaysia, the consensus in the studies discussed can be a foundation to hypothesize that:

H$_1$: There is a significant relationship between the financial literacy and entrepreneurship spirit of accounting undergraduates

Financial Literacy and Personal Financial Management

Personal finance refers to a variation of consumer finance, including family finance (Xiao & Tao, 2020). Managing personal finances involves how individuals handle and organize their daily financial affairs (Meghana & Sarala, 2020), including savings, investment management, and financial planning. This study investigates individuals' personal financial management practices regarding their perceptions of savings, investment, and wealth accumulation, including their attitude toward money.

Savings are the portion of an individual's income that is separated and kept for future use and not included as a part of daily expenses and commitments. Savings help individuals overcome future financial burdens and improve their quality of life (Kassim et al., 2020). On the other hand, investment is the act of acquiring items or assets to generate income or increment or appreciate the value of said assets. Most high-return investments require the individual to have a high holding power over a long period to realize the asset's income and appreciation (Sailaja & Madhavi, 2016). Money attitude is the perception individuals have towards money, whether positive or negative. A sound money attitude encourages individuals to behave wisely in financial transactions, especially personal ones. Wealth accumulation relates to the collection of assets over a period (Lok et al., 2017). Personal wealth is closely linked to one's savings behavior (Ketkaew et al., 2020) and can be accumulated from a variation of financial sources, including savings and personal inheritance (Wu, 2011), planning investments (Sailaja & Madhavi, 2016), as well as financial assets (Ketkaew et al., 2020). Wealth accumulation is also closely tied to retirement planning (Lok et al., 2017). This study examines the

youth's perception of savings, investment, money attitude and wealth accumulation to gain insight into their financial management.

Managing personal finance may require individuals to possess financial-related skills to achieve financial well-being in the future (Ketkaew et al., 2020). Following this, being financially literate may be a strong factor that influences individuals to make wise decisions about their personal finances in terms of savings, investment, attitude towards money, and wealth accumulation. Wise management of these financial activities can help individuals provide a financial cushion for themselves in times of crisis or, better yet, achieve financial independence in the long run.

Across the literature, scholars have collectively found that financial literacy can be significantly linked with making healthy saving decisions (Murendo & Mutsonziwa, 2017) and sound saving behavior (Amari et al., 2020; Nguyen & Doan, 2020). Although prudent savings behavior can also be developed from educational backgrounds and early exposure from family (Kassim et al., 2020), being financially literate can enhance an individual's ability to consistently behave and make rational saving decisions in the long run.

On a similar note, financial literacy also significantly influences decision-making related to investments (Abdullah et al., 2019; Zaidi & Tahir, 2019). Financial literacy is also able to ignite short-term and long-term investment intentions among the youth (Sadiq & Khan, 2019). This insinuates that financial literacy is a form of confidence that can encourage and drive the youth to develop interest and success in investing. An

interesting finding by Zaidi and Tahir (2019) highlighted that accounting information is vital in making investment decisions, suggesting that investors require accounting knowledge to make investment decisions.

Further, the literature lacks studies examining the significance of financial literacy in developing a positive money attitude, other than one by Isomidinova et al. (2017), which indicated that financial literacy did not influence money attitude. However, some studies indicate the links between both constructs. Albeerdy and Gharleghi (2015) discovered that money attitude plays a key role in determining financial literacy. According to this, a more positive attitude leads to a higher level of financial literacy; this may be due to their willingness to better manage their finances, which is derived from their good attitude towards money.

In another study, money attitude and financial literacy were identified as key contributors to an individual's financial well-being (Abdullah et al., 2019), insinuating that both are needed to attain financial success. According to Qamar et al. (2016), financial literacy serves as a moderating factor in the connection between money attitude and personal financial management. This implies that financial literacy is essential in influencing one's attitude towards money and approach to personal financial management. These findings indicate that financial literacy and money attitude correlate. Hence, this paper hypothesizes that financial literacy can influence the attitude toward good money.

From the perspective of wealth accumulation, studies across the literature

have indicated the importance of financial literacy in accumulating wealth and planning for retirement. According to Janposri (2021), financial literacy is beneficial in accumulating wealth and planning for retirement. Anxiety levels are also reduced since more assets can be procured from being financially literate (Kadoya et al., 2018). In Japan, it has been demonstrated that financial literacy significantly contributes to individuals' wealth accumulation, yielding substantial economic benefits (Sekita et al., 2018). Further, wealth accumulation was studied against the contribution of individuals and retirement planning (Ketkaew et al., 2020; Lok et al., 2017), which also suggests being financially literate in both activities. Essentially, it can be said that financial literacy is needed to accumulate wealth, which is also part of retirement planning. Drawing from the discussion on savings, investment, money attitude, and wealth accumulation, it is apparent that financial literacy is a key element of effective personal financial management. This leads to the following hypothesis:

H$_2$: There is a significant relationship between financial literacy and the personal financial management of accounting undergraduates

Personal Financial Management as a Mediator

On top of being financially literate, having a good sense of personal financial management can also be a factor that can ignite the youth entrepreneurship spirit. This is because competent personal finance skills may help to develop a strong foundation in managing the finances of a business. Further, it can also be a source of funds for youth to venture into entrepreneurship, should they manage their finances wisely (Amari et al., 2020). For instance, strategic saving habits can help individuals build funds to start a business. Possessing a positive money attitude encourages individuals to desire effective utilization of business finance resources, while investment knowledge and a good perception of wealth accumulation can ensure the business value appreciates in the long term and simultaneously gradually expands (Janposri, 2021).

Ripain et al. (2017) recognized that financial literacy was significant in managing a business. They suggested that the financial management skills of entrepreneurs need to be enhanced since their financial literacy level was concerning. Following this, the authors recommended that financial management skills need to be enhanced at an early level through education. Moreover, the authors emphasized that possessing good financial management skills can ensure the long-term survival of a business. Financial management skills are commonly one of the elements contributing to entrepreneurial success (Salikin et al., 2014). From these discussions, it can be hypothesized that:

H$_3$: There is a significant relationship between personal financial management and the entrepreneurship spirit of accounting undergraduates

H$_4$: Personal financial management mediates the relationship between

financial literacy and the entrepreneurial spirit of accounting undergraduates

METHOD

This study explores how financial literacy influences entrepreneurial spirit and the role of personal financial management as a mediator. This quantitative research employed a self-administered questionnaire adapted from several scholars. Items for financial literacy were adapted from scholars such as Atkinson and Messy (2012), Shockey (2002), and van Rooij et al. (2012); meanwhile, for entrepreneurship spirit, the items were adapted from Liñán and Chen (2009). The Theory of Planned Behavior (TPB) was used as an underlying framework, where financial literacy and personal financial management were conceptualized as accounting undergraduates' perceived behavioral control, and entrepreneurship spirit as the behavioral intention. The study highlights the psychological and behavioral mechanisms through which financial knowledge and skills translate into entrepreneurial motivation by integrating TPB.

The questionnaire includes (1) the demographic profile of the participants (gender, age, university); (2) financial literacy (financial knowledge, financial attitude, and financial behavior); (3) personal financial management (saving, investment, money attitude and wealth accumulation); and (4) entrepreneurship spirit (see Appendix for details). The reliability and validity of the questionnaire were ensured through a pilot study, with the results prompting final revisions before it was used in the main study. The analysis showed that the questionnaire was reliable and valid, confirming that it was ready for larger data collection.

The questionnaire was administered to final-year accounting undergraduates in seven universities across Malaysia. Accounting students acquire financial knowledge, positive financial attitudes, and sound financial behavior through their curriculum. These factors contribute to their financial management and serve as a foundation for entrepreneurial success. Hence, focusing on this group provides insights into how strong financial literacy and personal financial management skills can influence entrepreneurial spirit (Singh & Masuku, 2014). A total of 756 responses were obtained through simple random sampling. However, only 749 were applicable for further analysis. The collected data was cleaned using SPSS, and structural equation modeling (SEM) was performed with SmartPLS 4 to analyze the relationship between financial literacy and entrepreneurial spirit and the mediating effect of personal financial management.

FINDINGS

Structural Equation Modelling

The structural equation model was evaluated through measurement and structural models. The evaluation of the measurement model extends as a Hierarchical Component Model (HCM) since the lower-order constructs (LOC; financial knowledge, financial behavior, financial attitude, savings, investment, money attitude and wealth accumulation) are simultaneously

mapped to single higher-order constructs (HOC; financial literacy and personal financial management; Hair et al., 2018). The reflective-reflective HCM is conducted through an embedded two-stage approach. In the initial stage, the repeated indicator approach was applied to derive the LOC scores, which were then used as manifest variables in evaluating the HOC (Sarstedt et al., 2019). The evaluation of the HOCs is based on using the LOC scores as indicators within the measurement model of the HOCs. Internal consistency, convergent validity, and discriminant validity were evaluated throughout both stages.

Stage 1: Assessment of LOC Measurement Model

Internal consistency for the LOCs was confirmed, as all Cronbach's alpha and composite reliability values surpassed the recommended threshold of 0.7 (Hair et al., 2017). The factor loadings and the average variance extracted (AVE) were considered to assess the convergent validity of the LOCs. Factor loadings of items with values above 0.6 were retained to ensure high convergent validity, resulting in the deletion of five items from financial attitude and money attitude (FA1, FA2, MA1, MA3 and MA4). Further, all LOCs meet the recommended threshold values for AVE, exceeding 0.5 (Hair et al., 2017). Essentially, the internal consistency and convergent validity of the LOC measurement model were established. The results are summarized in Table 1.

The discriminant validity of the LOCs was checked through the Fornell-Larcker Criterion (Fornell & Larcker, 1981). To establish discriminant validity using the Fornell-Larcker Criterion (1981), the square root of the AVE for each LOC must be greater than its highest correlation with other LOCs (Hair et al., 2017). Table 2 displays the square root of the AVE for each LOC, which exceeds the highest correlation with other LOCs. As a result, discriminant validity is established for the LOC measurement model. Accordingly, the LOC measurement model is displayed in Figure 1.
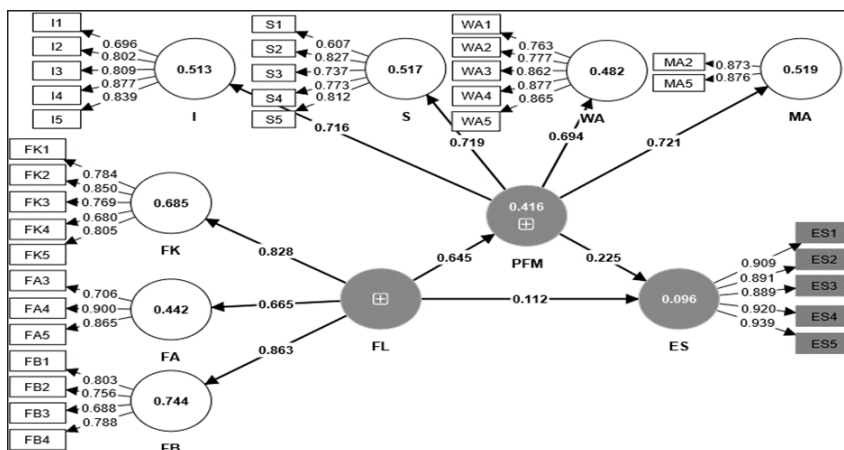
Figure 1. LOC measurement model

Table 1
Factor loading, validity and reliability of LOCs

LOCs	Items	Loadings (>0.6)	CA (>0.7)	CR (>0.7)	AVE (>0.5)
ES (Entrepreneurship spirit)	ES1	0.909	0.948	0.96	0.827
	ES2	0.891			
	ES3	0.889			
	ES4	0.92			
	ES5	0.939			
FA (Financial attitude)	FA3	0.706	0.766	0.866	0.686
	FA4	0.9			
	FA5	0.865			
FB (Financial behavior)	FB1	0.803	0.756	0.845	0.578
	FB2	0.756			
	FB3	0.688			
	FB4	0.788			
FK (Financial knowledge)	FK1	0.784	0.836	0.885	0.607
	FK2	0.85			
	FK3	0.769			
	FK4	0.68			
	FK5	0.805			
I (Investment)	I1	0.696	0.864	0.903	0.651
	I2	0.802			
	I3	0.809			
	I4	0.877			
	I5	0.839			
MA (Money Attitude)	MA2	0.873	0.693	0.867	0.765
	MA5	0.876			
S (Saving)	S1	0.607	0.809	0.868	0.57
	S2	0.827			
	S3	0.737			
	S4	0.773			
	S5	0.812			
WA (Wealth accumulation)	WA1	0.763	0.886	0.917	0.689
	WA2	0.777			
	WA3	0.862			
	WA4	0.877			
	WA5	0.865			

Notes. LOCs= Lower order constructs; CA=Cronbach's alpha; CR=Composite reliability; AVE=Average variance extracted

Table 2
Fornell-Larcker Criterion for LOC discriminant validity assessment

	ES	FA	FB	FK	I	MA	S	WA
ES	**0.910**							
FA	0.035	**0.828**						
FB	0.212	0.521	**0.760**					
FK	0.278	0.277	0.532	**0.779**				
I	0.288	0.086	0.308	0.391	**0.807**			
MA	0.258	0.225	0.532	0.273	0.362	**0.875**		
S	0.253	0.330	0.531	0.338	0.255	0.683	**0.755**	
WA	0.074	0.561	0.424	0.332	0.369	0.249	0.231	0.830

Stage 2: Assessment Of the HOC Measurement Model

Latent variable scores of the LOCs in the first stage were used as indicators to draw the HOC measurement model (Sarstedt et al., 2019). The HOC measurement model is evaluated similarly to the LOC model; hence, internal consistency, convergent validity and discriminant validity were observed. The composite reliability of both HOCs was met. Meanwhile, Cronbach's alpha for personal financial management was slightly below the cut-off value 0.7. However, according to Churchill (1979), a Cronbach's alpha above 0.6 is still considered acceptable. Hence, the internal consistency of the HOC measurement model was achieved.

Convergent validity for the HOC measurement model was established, with both factor loadings and AVE values meeting the required cut-off thresholds of 0.6 and 0.5, respectively, for both HOCs. Table 3 presents the results for the internal consistency and convergent validity of the model.

As in the first stage, the discriminant validity of the HOCs was assessed using the Fornell-Larcker Criterion (1981).

Table 3
Factor loadings, reliability, and validity of HOC

HOC	Indicators	Loadings (>0.6)	CA (>0.7)	CR (>0.7)	AVE (>0.5)
Financial Literacy	FA	0.702	0.705	0.835	0.630
	FB	0.898			
	FK	0.769			
Personal Financial Management	I	0.647	0.690	0.812	0.523
	MA	0.810			
	S	0.784			
	WA	0.633			

Notes. HOCs=Higher order constructs; CA=Cronbach's alpha; CR=Composite reliability; AVE=Average variance extracted

As shown in Table 4, the square root of the AVE for each HOC exceeds its highest correlation with other HOCs. Thus, discriminant validity between the HOCs has been established, allowing for the structural model assessment. The HOC measurement model is demonstrated in Figure 2.

Table 4
Fornell-Larcker Criterion for HOC discriminant validity assessment

	ES	FL	PFM
ES	0.910		
FL	0.233	0.794	
PFM	0.300	0.648	0.723

Structural Model Assessment

Path Analysis

SmartPLS 4 was used to conduct bootstrapping, allowing for the estimation of path coefficients and testing the significance of the hypothesized relationships. H_1 evaluates the association between financial literacy and the entrepreneurial spirit of accounting undergraduates. The results in Table 5 indicate that the relationship between accounting undergraduates' financial literacy and entrepreneurial spirit is insignificant ($\beta=0.067$, t=0.100, $p=0.503$). Hence, H_1 was not supported.

H_2 explores the connection between financial literacy and personal financial management among accounting undergraduates. The findings reveal a positive and significant relationship between financial literacy and personal financial management ($\beta=0.648$, t=14.629, $p=0.000$). Hence, H_2 was supported.

H_3 investigates how personal financial management influences the entrepreneurial spirit of accounting undergraduates. Findings reveal a significant and positive relationship between personal financial management and entrepreneurial spirit among accounting undergraduates ($\beta=0.256$, t=2.582, $p=0.010$). Hence, H_3 was also supported. Table 5 presents the results, while Figure 3 illustrates the structural model.
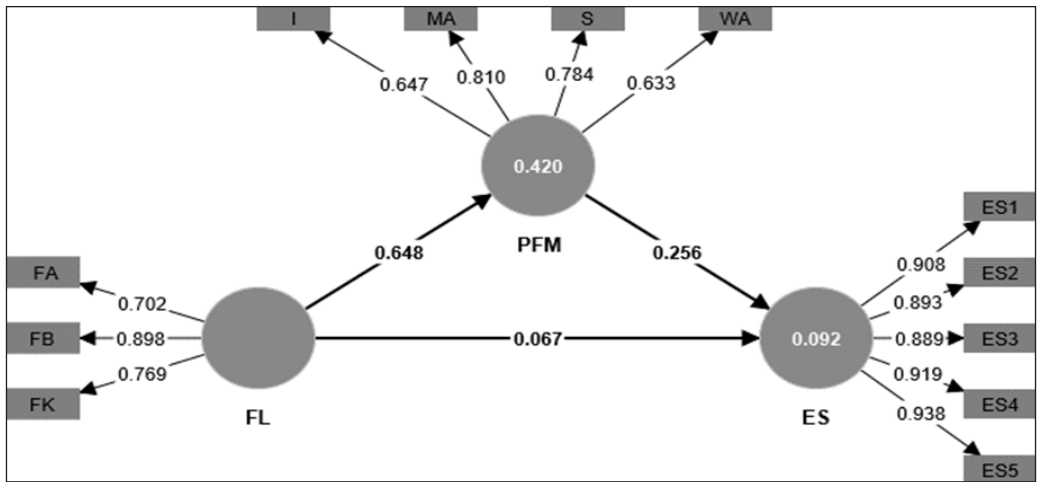
Figure 2. HOC Measurement models

Table 5
Path analysis results

	β	Standard deviation	T statistics	*p*-values
H1: FL -> ES	0.067	0.100	0.669	0.503
H2: FL - > PFM	0.648	0.044	14.629	0.000
H3: PFM - > ES	0.256	0.099	2.582	0.010
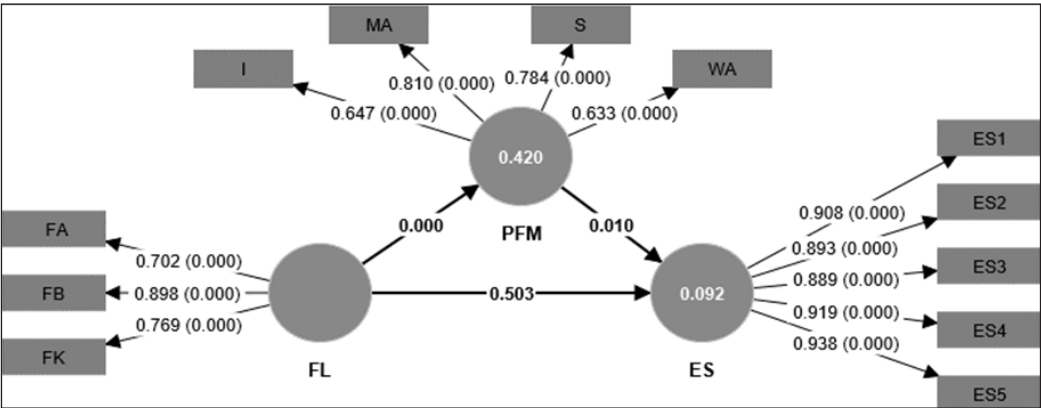
Figure 3. Structural model

Mediation Analysis

A mediation model suggested by Zhao et al. (2010) was adapted in accordance with the variables of this study, as depicted in Figure 4. The model outlines the path relations of P1, P2 and P3 that refer to the mediation model between financial literacy, personal financial management and entrepreneurship spirit. Mediation effects were analyzed through the mediation analysis procedure by Hair et al. (2017), as demonstrated in Figure 5.

According to Figure 5, the initial analysis observes the importance of
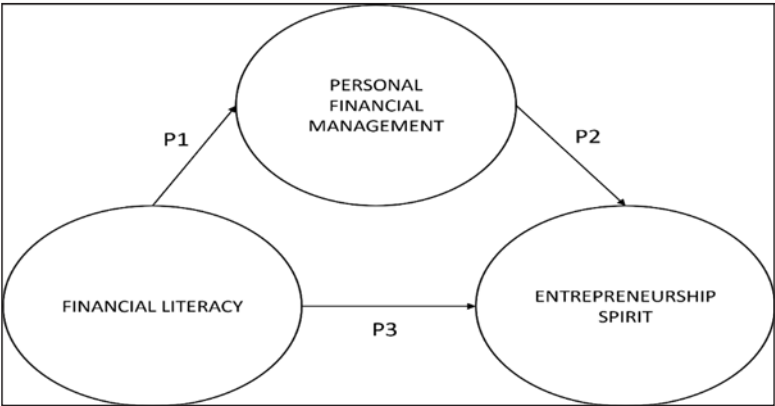
Figure 4. Mediation model (Source: Zhao et al., 2010)

financial literacy's indirect effect on the spirit of entrepreneurship (P1.P2) through personal financial management, which is the mediator variable. The results presented in Table 6 indicate that the indirect effects are significant ($\beta = 0.166$, t = 2.402, $p = 0.016$). The next step involved assessing the significance of the direct effect between financial literacy and entrepreneurial spirit, revealing that the direct effect is not significant ($\beta = 0.067$, t = 0.669, $p = 0.503$). Based on the significance of indirect effects and insignificance of the direct effects, it is concluded in accordance with Figure 5 that personal financial management has a full mediating effect on the link between financial literacy and entrepreneurial spirit. Hence, H_4 was supported. Figures 4 and 5, including Table 6, are defined as follows.

DISCUSSION

Financial Literacy in Relation to Entrepreneurship Spirit

The first hypothesis suggested that financial literacy is significantly and positively related to entrepreneurial spirit. Findings revealed otherwise, suggesting an insignificant relationship between the two. Hence, although accounting undergraduates demonstrate an elevated level of financial

Table 6
Results of mediation analysis

	Coefficient	T-value	*p*-value
Indirect Effect (P1.P2)	0.166	2.402	0.016
Direct Effect (P3)	0.067	0.669	0.503
Total Effect (P1.P2.P3)	0.233	3.709	0.000
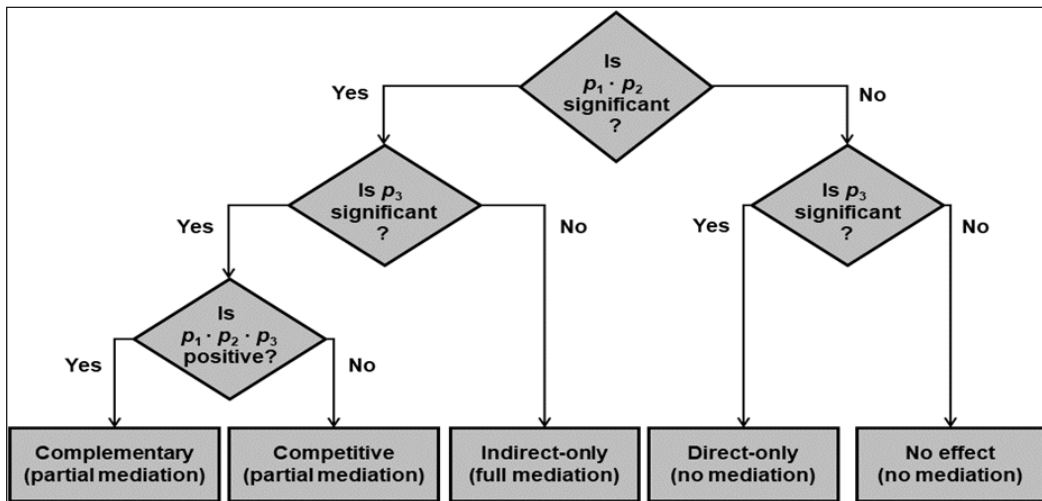
Figure 5. Mediation analysis procedure (Source: Hair et al., 2017)

literacy, it is not considered an indicator that can ignite the youth entrepreneurship spirit due to the insignificant relationship. This finding is consistent with a recent study by Alshebami and Al Marri (2022), where the entrepreneurship intention of students deemed potential entrepreneurs did not develop through financial literacy.

The results contrasted the literature findings where financial literacy and entrepreneurship intention are positively related (Ahmad et al., 2019; Bayrakdaroglu & Bayrakdaroğlu, 2017; Bilal et al., 2020). The disparity in results could be attributed to external factors such as structural and financial support, regardless of the youths' interest and ability (being financially literate) to become entrepreneurs. Structural support, such as government interventions, can effectively give the youth greater perceived behavioral control over venture creation (Youssef et al., 2021), leading to developing entrepreneurial intention.

Further, financial assistance, a form of comprehensive structural support, can provide the youth with a conducive ecosystem to empower them to become potential entrepreneurs. This was evidenced in the study by Hassan et al. (2020), where financial support was an important factor in shaping the entrepreneurial attitude of Malaysian youth and, hence, increasing their entrepreneurial spirit. Nevertheless, entrepreneurs generally face issues such as difficulty in obtaining funds and not knowing how to access them, regardless of the availability of financial assistance (MEDAC, 2019). This situation makes it

harder for youth to obtain initial capital for their start-up since the majority do not have a stable income that can guarantee a return on investment. Compared to adults, the youth are also less likely to have access to formal financial services (Amari et al., 2020). Essentially, these findings indicate that the youth face difficulty in obtaining funds and have limited financial assistance available for them in venture creation (Youssef et al., 2021). For these reasons, the youth's entrepreneurial spirit may be more affected by funds than their financial ability to manage a business.

Looking at a more detailed perspective, a few observations were drawn from the statistical findings of the elements of financial literacy. In regard to financial knowledge, accounting undergraduates demonstrate a high consciousness of the financial movements in the economy. However, their awareness of the financial movements in the economy leaned more towards personal financial changes rather than the financial changes of other entities or bodies. This suggests that they lack business financial knowledge, which may contribute to their disinterest in entrepreneurship.

Further, across all items, accounting undergraduates generally show positive financial behavior. However, they demonstrate a lack of determination to achieve their long-term financial goals, which could threaten the going concern of their enterprise should they venture into entrepreneurship. Their lack of dedication to attain long-term goals may hamper their willingness to become entrepreneurs since

entrepreneurs need to be highly driven and motivated to achieve long-term goals. Lastly, the undergraduates scored high for all items of financial attitude, indicating a positive attitude. Financial knowledge and behavior impacted financial literacy the most among the three elements. Hence, their roles in igniting the spirit of entrepreneurship can be enhanced through education to increase youth participation.

Mediating Effects of Personal Financial Management on the Relationship Between Financial Literacy and Entrepreneurship Spirit

The mediation analysis results indicated that personal financial management completely mediates the relationship between financial literacy and entrepreneurial spirit. This result is derived from the significant indirect effects of personal financial management on the association between financial literacy and entrepreneurship spirit, including the insignificant direct effect of financial literacy on entrepreneurship spirit. In other words, full mediation of personal financial management takes place due to the insignificance of the direct path of financial literacy and entrepreneurship spirit.

According to Hair et al. (2017), a mediator variable is expected to reflect the changes in the independent variable and affect the result of the dependent variable. This is identical to the findings of this study, which found the significance of the relation between financial literacy and entrepreneurship spirit only when personal financial management is assigned

as a mediator of the linear relationship. Consequently, accounting undergraduates with a high level of financial literacy are better equipped to manage personal wealth effectively, enhancing their entrepreneurial spirit.

The strong relationship between financial literacy and personal financial management has been supported by scholars in the literature, particularly in areas such as saving (Amari et al., 2020; Nguyen & Doan, 2020), investment (Bazkiaei et al., 2021; Khan et al., 2019), money attitude (Abdullah et al., 2019), and wealth accumulation (Sekita et al., 2018). This could be attributed to their enhanced level of financial literacy, which allows them to utilize their financial knowledge to make informed financial decisions (Ergun et al., 2018). Conversely, individuals with lower financial literacy risk becoming financially fragile (Shen et al., 2016). In addition, accounting undergraduates are also exposed to financial and management courses, raising their recognition of the value of financial management.

Moreover, the significant relationship between personal financial management and the spirit of entrepreneurship aligns with the literature, indicating that saving, investment, money attitude, and wealth accumulation can increase the spirit of entrepreneurship. Good saving behavior instills healthy saving habits in individuals, allowing them to build initial capital to start a new business (Rikwentishe et al., 2015), which increases their confidence and inclination toward becoming entrepreneurs. Possessing investment knowledge at a

personal level is good exposure to making advantageous investment decisions related to additional business capital or business expansion. Meanwhile, a positive attitude towards money effectively shapes one's way of managing their income (Abdullah et al., 2019), which can enhance their financial well-being and, eventually, the finances of a business. Strategic wealth accumulation can help individuals plan for retirement and, in the same sense, be advantageous for managing enterprise assets.

CONCLUSION

Results indicated that accounting undergraduates' financial literacy had no significant impact on their entrepreneurial spirit. Nevertheless, personal financial management acted as a full mediator in the link between financial literacy and entrepreneurial spirit. The result implies that enhanced financial literacy can improve personal financial management among the youth, thereby elevating their entrepreneurial spirit.

The implication of the findings led to recommendations for related authorities to enhance entrepreneurship education at the tertiary level. Relevant bodies should work on refining entrepreneurship education to emphasize both the development of young entrepreneurial traits and the management of personal finances. The theoretical contribution of this research lies in its proposed enhancement of the Theory of Planned Behavior (TPB) by incorporating personal financial management as a mediating factor in the relationship between

financial literacy and entrepreneurship spirit. This approach aligns with recent findings highlighting the need for mediating variables in TPB to better capture complex relationships in behavioral studies (Hair et al., 2017; Zhao et al., 2010). The results reveal that financial literacy alone does not directly inspire the entrepreneurial spirit; rather, it influences the entrepreneurial spirit indirectly through improved personal financial management skills. This insight expands TPB by introducing an additional pathway for understanding entrepreneurial motivation, highlighting the importance of financial management as a foundational skill that enables financial literacy to translate into entrepreneurial aspirations (Alshebami & Al Marri, 2022; Hassan et al., 2020). This framework can better explain how financial education initiatives might foster entrepreneurship, particularly in the context of youth and emerging entrepreneurs.

Furthermore, this study suggests that the Ministry of Higher Education (MOHE), in collaboration with higher education institutions, can enhance this finding by refining entrepreneurship courses and integrating elements of personal financial management (such as savings, investment, money attitude, and wealth accumulation) into the financial aspects of these courses. This approach is expected to give the youth wider exposure to ways to direct their finances towards new venture creation. As a result, the youth may prosper in their financial well-being. At the same time, they should strategize utilizing their finances as capital for their business start-up. Hence,

more youth will be expected to dive into entrepreneurship and fulfill Malaysia's goal to transform into an entrepreneurial nation by 2030.

Limitations and Recommendations for Future Research

The study concentrated exclusively on accounting undergraduates from seven public universities in Malaysia. While this provides insights into this specific group, it limits the generalizability of the findings to other student populations or working adults. Therefore, future research should explore a more diverse sample that includes students from different academic disciplines, working professionals, or entrepreneurs themselves to improve generalizability. Conducting longitudinal studies could offer deeper insights into how financial literacy, personal financial management, and entrepreneurial spirit develop over time and in different contexts. Future research could explore other factors mediating financial literacy and entrepreneurial spirit, such as access to financial resources, mentorship programs, or digital literacy. These limitations and recommendations highlight the need for broader research approaches to better understand the complex dynamics between financial literacy, personal financial management, and entrepreneurship.

ACKNOWLEDGEMENT

REFERENCES

Abd Rahman, N. H., Ismail, S., Ridzuan, A. R., & Abd Samad, K. (2020). The issue of graduate unemployment in Malaysia: Post Covid-19. *International Journal of Academic Research in Business and Social Sciences, 10*(10), 834-841. https://doi.org/10.6007/IJARBSS/v10-i10/7843

Abdullah, N., Fazli, S. M., & Muhammad Arif, A. M. (2019). The relationship between attitude towards money, financial literacy and debt management with young worker's financial well-being. *Pertanika Journal of Social Sciences & Humanities, 27*(1), 57-69.

Adomako, S., & Danso, A. (2014). Financial literacy and firm performance: The moderating role of financial capital availability and resource flexibility. *International Journal of Management and Organizational Studies, 3*(4), 41-56.

Ahmad, N. L., Mohd Fazil, N. F., & Abu Bakar, B. (2021). Entrepreneurship motivation among accounting students: The role of financial literacy and financial behaviour. *Jurnal Pengurusan, 63*, 141-152.

Ahmad, N. L., Yusof, R., Ahmad, A. S. & Ismail, R. (2019). The importance of financial literacy towards entrepreneurship intention among university students. *International Journal of Academic Research in Business and Social Sciences, 9*(9), 18-39. https://doi.org/10.6007/IJARBSS/v9-i9/6266

Albeerdy, M. I., & Gharleghi, B. (2015). Determinants of the financial literacy among college students in Malaysia. *International Journal of Business Administration, 6*(3), 15-24. https://doi.org/10.5430/ijba.v6n3p15

Aligishiev, Z., & Gravesteijn, R. (2020). Y*outh entrepreneurs engaging in the digital economy:*

the next generation. UN Capital Development Fund.

Alshebami, A. S., & Al Marri, S. H. (2022). The impact of financial literacy on entrepreneurial intention: The mediating role of saving behavior. *Frontiers in Psychology, 13*, Article 911605. https://doi.org//10.3389/fpsyg.2022.911605

Amari, M., Salhi, B., & Jarboui, A. (2020). Evaluating the effects of sociodemographic characteristics and financial education on saving behavior. *International Journal of Sociology and Social Policy, 40*(11/12), 1423-1438. https://doi.org/10.1108/IJSSP-03-2020-0048

Atkinson, A., & Messy, F. (2012). *Measuring financial literacy: Results of the OECD/International Network on Financial Education (INFE) Pilot study* (Working Papers on Finance, Insurance and Private Pensions No. 15) OECD Publishing. https://doi.org/10.1787/5k9csfs90fr4-en

Bayrakdaroglu, A., & Bayrakdaroğlu, F. (2017). A comparative analysis regarding the effects of financial literacy and digital literacy on internet entrepreneurship intention. *Journal of Entrepreneurship and Development, 12*(2), 23-40.

Bazkiaei, H. A., Khan, N. U., Irshad, A.-u., & Ahmed, A. (2021). Pathways toward entrepreneurial intention among Malaysian universities' students. *Business Process Management Journal, 27*(4), 1009-1032. https://doi.org/10.1108/BPMJ-01-2021-0021

Bilal, M. A., Khan, H. H., Irfan, M., Ul Haq, S. M. N., Ali, M., Kakar, A., Rauf, A. (2020). Influence of financial literacy and educational skills on entrepreneurial intent: Empirical evidence from young entrepreneurs of Pakistan. *The Journal of Asian Finance, Economics and Business, 8*(1), 697-710. https://doi.org/10.13106/jafeb.2021.vol8.no1.697

Churchill, G. A., Jr. (1979). A paradigm for developing better measures of marketing constructs. *Journal of Marketing Research, 16*(1), 64-73. https://doi.org/10.2307/3150876

Ergun, S., Çinko, M., Avci, E., & Tekçe, M. (2018). An analysis on the relationship between financial literacy and entrepreneurial intention: Evidence from Turkish university students. In J. Vopava, V. Douda, R. Kratochvil, & M. Konecki (Eds.), *Proceedings of MAC 2018 in Prague* (pp. 25-33). MAC Prague consulting s.r.o.

Fatoki, O. (2014). The financial literacy of micro entrepreneurs in South Africa. *Journal of Social Sciences, 40*(2), 151-158.

Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. *Journal of Marketing Research, 18*(3), 382-388. https://doi.org/10.2307/3150980

Hair, J. F., Hult, T. M., Ringle, C. M., & Sarstedt, M. (2018). *A Partial Least Squares Structural Equation Modeling (PLS-SEM;* 2nd ed.). Thousand Oakes.

Hair, J. F., Jr., Sarstedt, M., Ringle, C. M., & Gudergan, S. P. (2017). *Advanced issues in partial least squares structural equation modeling*. Sage Publications.

Hassan, H., Sade, A. B., & Rahman, M. S. (2020). Shaping entrepreneurial intention among youngsters in Malaysia. *Journal of Humanities and Applied Social Sciences, 2*(3), 235-251. https://doi.org/10.1108/JHASS-02-2020-0029

Isomidinova, G., Singh, J. S. K., & Singh, K. (2017). Determinants of financial literacy: A quantitative study among young students in Tashkent, Uzbekistan. *Electronic Journal of Business & Management, 2*(1), 61-75.

Janposri, P. (2021). The role of financial literacy in retirement planning and wealth accumulation among self-employed Thai workers. *Journal of Population and Social Studies, 29*, 177-194. https://doi.org/10.25133/JPSSv292021.011

Kadoya, Y., & Khan, M. S. R. (2020). Financial literacy in Japan: New evidence using financial knowledge, behavior, and attitude. *Sustainability, 12*(9), Article 3683. https://doi.org/10.3390/su12093683

Kadoya, Y., Khan, M. S. R., Hamada, T., & Dominguez, A. (2018). Financial literacy and anxiety about life in old age: Evidence from the USA. *Review of Economics of the Household, 16*, 859-878. https://doi.org/10.1007/s11150-017-9401-1

Kassim, A. A. M., Tamsir, F., Azim, Z. A. Z., Mohamed, J., & Nordin, H. N. M. (2020). Students' saving behaviour: Do demographic profile, parents' 281 background and financial literacy matter? An empirical study in private universities in Selangor. *International Journal of Psychosocial Rehabilitation, 24*(1), 844-849.

Ketkaew, C., Van Wouwe, M., Vichitthamaros, P., & Teerawanviwat, D. (2020). The effect of expected income on wealth accumulation and retirement contribution of Thai wageworkers. *SAGE Open, 9*(4). https://doi.org/10.1177/2158244019898247

Khan, M. T. I., Tan, S. H., & Gan, G. G. (2019). Advanced financial literacy of Malaysian Gen Y investors and its consequences. *Margin*, *13*(1), 83-108. https://doi.org/10.1177/0973801018800085

Kloepfer, K., & Castrogiovanni, G. J. (2018). Entrepreneurship: Venture creation subprocesses, subdomains, and interfaces. *International Entrepreneurship and Management Journal, 14*, 681-696. https://doi.org/10.1007/s11365-018-0508-5

Li, R., & Qian, Y. (2019). Entrepreneurial participation, and performance: The role of financial literacy. *Management Decision, 58*(3), 583-599. https://doi.org/10.1108/MD-11-2018-1283

Liñán, F., & Chen, Y. W. (2009). Development and cross–cultural application of a specific instrument to measure entrepreneurial intentions. *Entrepreneurship Theory and Practice*, *33*(3),

593-617. https://doi.org/10.1111/j.1540-6520.2009.00318.x

Lok, S. Y. P., Ying, C. W., & Wei, L. H. (2017). A framework for retirement planning based on financial literacy and wealth accumulation. In K. Cermakova & J. Rotschedl (Eds.), *Proceedings of the 6th Business & Management Conference, Geneva* (pp. 142-151)*.* https://doi.org/10.20472/BMC.2017.006.012

Malaysian Department of Insolvency. (2019). *Bankruptcy Statistic 2019.* https://www.mdi.gov.my/index.php/legislation/bankruptcy

Meghana, M., & Sarala, K. (2020). Financial literacy and personal financial management – a review of 21st works. *Journal of Critical Reviews, 7*(13), 34-57.

Ministry of Entrepreneur Development and Cooperatives. (2019). *National Entrepreneurship Policy Malaysia: An Outstanding Entrepreneurial Nation 2030*. https://www.kuskop.gov.my/admin/files/med/image/portal/NEP2030-Final.pdf

Murendo, C., & Mutsonziwa, K. (2017). Financial literacy and savings decisions by adult financial consumers in Zimbabwe. *International Journal of Consumer Studies, 41*(1), 95-103. https://doi.org/10.1111/ijcs.12318

Murugiah, L. (2016). The level of understanding and strategies to enhance financial literacy among Malaysian. *International Journal of Economics and Financial Issues, 6*(3), 130-139.

Nguyen, V. T., & Doan, M. D. (2020). The correlation between financial literacy and personal saving behavior in Vietnam. *Asian Economic and Financial Review, 10*(6), 590-603. https://doi.org/10.18488/journal.aefr.2020.106.590.603

Oggero, N., Rossi, M. C., & Ughetto, E. (2020). Entrepreneurial spirits in women and men. The role of financial literacy and digital skills. *Small*

Business Economics, 55, 313-327. https://doi.org/10.1007/s11187-019-00299-7

Qamar, M. A. J., Khemta, M. A. N., & Jamil, H. (2016). How knowledge and financial self-efficacy moderate the relationship between money attitudes and personal financial management behavior. *European Online Journal of Natural and Social Sciences, 5*(2), 296-308.

Rehman, K., & Mia, M. D. (2024). Determinants of financial literacy: A systematic review and future directions. *Future Business Journal*, *10,* Article 75. https://doi.org/10.1186/s43093-024-00365-x

Rikwentishe, R., Pulka, B. M., & Msheliza, S. K. (2015). The effects of saving and saving habits on entrepreneurship development. *European Journal of Business and Management, 23*(7), 111-119.

Ripain, N., Amirul, S. M., & Mai, R. (2017). Financial literacy and SMEs' potential entrepreneurs: The case of Malaysia. *Journal of Administrative and Business Studies*, *3*(2), 60-68. https://doi.org/10.20474/jabs-3.2.1

Sadiq, M. N., & Khan, R. A. A. (2019). Impact of personality traits on investment intention: The mediating role of risk behaviour and the moderating role of financial literacy. *Journal of Finance and Economics Research, 4*(1), 1-18.

Sailaja, V. N., & Madhavi, N. B. (2016). Relationship between retirement wealth and householders' personal financial and investment behavior. *Man in India, 96*(5), 1521-1529.

Salikin, N., Ab Wahab, N., & Muhammad, I. (2014). Strengths and weaknesses among Malaysian SMEs: Financial management perspectives. *Procedia Social & Behavioral Sciences*, *129*, 334-340. https://doi.org/10.1016/j.sbspro.2014.03.685

Sarstedt, M., Hair, J. F., Jr, Cheah, J. H., Becker, J. M., & Ringle, C. M. (2019). How to specify, estimate, and validate higher-order constructs in PLS-SEM. *Australasian Marketing Journal, 27*(3), 197-211. https://doi.org/10.1016/j.ausmj.2019.05.003

Sekita, S., Kakkar, V., & Ogaki, M. (2018). *Wealth, financial literacy and behavioral biases: Evidence from Japan* (Keio-IES Discussion Paper Series No. DP2018-023). Institute for Economics Studies, Keio University. https://ies.keio.ac.jp/upload/pdf/en/DP2018-023.pdf

Shen, C. H., Lin, S. J., Tang, D. P., & Hsiao, Y. J. (2016). The relationship between financial disputes and financial literacy. *Pacific-Basin Finance Journal*, *36,* 46-65. https://doi.org/10.1016/j.pacfin.2015.11.002

Shockey, S. S. (2002). *Low-wealth adults' financial literacy, money management behaviors, and associated factors, including critical thinking* [Doctoral dissertation, The Ohio State University]. http://rave.ohiolink.edu/etdc/view?acc_num=osu1486402544590666

Singh, A., & Masuku, M. (2014). Sampling techniques & determination of sample size in applied statistics research: An overview. *International Journal of Commerce and Management II,* (11), 1-22.

Stoica, O., Roman, A., & Rusu, V. D. (2020). The nexus between entrepreneurship and economic growth: A comparative analysis on groups of countries. *Sustainability, 12*(3), Article 1186. https://doi.org/10.3390/su12031186

Suparno, S., & Saptono, A. (2018). Entrepreneurship education and its influence on financial literacy and entrepreneurship skills in college. *Journal of Entrepreneurship Education, 21*(4), 1-11.

Usama, K. M., & Yusoff, W. F. W. (2018). The relationship between entrepreneurs' financial literacy and business performance among entrepreneurs of Bauchi State Nigeria. *International Journal of Entrepreneurship and Business Innovation, 1*(1), 15-26.

van Rooij, M. C., Lusardi, A., & Alessie, R. J. (2012). Financial literacy, retirement planning and household wealth. *The Economic Journal, 122*(560), 449-478. https://doi.org/10.1111/j.1468-0297.2012.02501.x

Wu, B. (2011). 4—Consumption and economic law. In *Consumption and Management: New Discovery and Applications* (pp. 61-97). Chandos Publishing. https://doi.org/10.1016/B978-1-907568-07-7.50004-3

Xiao, J. J., & Tao, C. (2020). Consumer finance/household finance: The definition and scope. *China Finance Review International*, *11*(1), 1-25. https://doi.org/10.1108/CFRI-04-2020-0032

Youssef, A. B., Boubaker, S., Dedaj, B., & Carabregu-Vokshi, M. (2021). Digitalization of the economy and entrepreneurship intention. *Technological Forecasting and Social Change, 164,* Article 120043. https://doi.org/10.1016/j.techfore.2020.120043

Zaidi, A. Z. A., & Tahir, N. S. (2019). Factors that influence investment decision making among potential individual investors in Malaysia. *Advances in Business Research International Journal, 5*(1), 9-21.

Zaimovic, A., Torlakovic, A., Arnaut-Berilo, A., Zaimovic, T., Dedovic, L., & Meskovic, M. M. (2023). Mapping financial literacy: A systematic literature review of determinants and recent trends. *Sustainability, 15*(12), Article 9358. https://doi.org/10.3390/su15129358

Zhao, H., Seibert, S. E., & Lumpkin, G. T. (2010). The relationship of personality to entrepreneurial intentions and performance: A meta-analytic review. *Journal of Management, 36*(2), 381-404. https://doi.org/10.1177/0149206309335187

APPENDIX

Measurement Items for Financial Literacy and Entrepreneurship Spirit

		Details
S	S1	I save money because it is important for my future.
	S2	I make consistent savings because I plan my monthly expenses.
	S3	I make an effort to save even if my income/allowance is low.
	S4	I put money aside to use later for a specific purpose (emergencies, car maintenance, traveling purposes)
	S5	I immediately put some money aside when I receive my income/allowance.
I	I1	I believe it is important to invest some amount of money in securities (stocks, mutual funds, bonds)
	I2	I prefer to invest in securities rather than leaving my money in a savings account.
	I3	I have the knowledge to invest in security markets.
	I4	I am confident in making successful investment decisions.
	I5	I diversify my investments in multiple securities and assets to obtain higher returns and reduce risks.
MA	MA1	I think that owning money is a good indicator of a person's success.
	MA2	I am good at managing my money.
	MA3	I tend to be worried about how much money I have.
	MA4	I enjoy buying expensive products to impress others.
	MA5	I am proud of my ability to save money.
	WA1	I believe personal property acquisition should be encouraged in today's society to accumulate wealth (personal properties, monetary funds, real estate, bonds and stocks).
WA	WA2	I believe good saving behavior can lead to successful accumulation of wealth (personal properties, monetary funds, real estate, bonds and stocks).
	WA3	I believe that investing in personal properties, monetary funds, real estate, bonds, and stocks creates wealth accumulation.
	WA4	I believe accumulating wealth (personal properties, monetary funds, real estate, bonds, and stocks) can lead to financial independence.
FK	FK1	I am aware of the different financial products offered by financial institutions.
	FK2	I am well-informed about financial changes in the economy (interest rates, cost of borrowing, tax rates)
	FK3	I have the knowledge to keep track of new business financing options.
	FK4	I am aware of what inflation does to the value of money over time.
	FK5	I am aware of the different credit agreements (credit cards, personal loans, and mortgages) available in the market.
FB	FB1	I always make sure I spend according to my budget.
	FB2	I always make careful considerations before I buy something to ensure I can afford it.
	FB3	I always pay my bills on time.
	FB4	I set long-term financial goals and work hard to achieve them.
	FA1	I believe it is more satisfying to spend money than to save it for long-term purposes.

		Details
FA	FA2	I think money is there to be spent.
	FA3	The way I manage my money today will affect my future.
	FA4	I believe it is important to follow a monthly expense plan.
ES	ES1	I firmly intend to establish my own business after I graduate.
	ES2	I will work hard to start my own business.
	ES3	My ambition is to become an entrepreneur.
	ES4	I have seriously thought about starting my own business.
	ES5	I am determined to create a business in the future.

Note. S=Saving, I=Investment, MA=Money Attitude, WA=Wealth Accumulation, FA=Financial Knowledge, FB= Financial Behavior, FA= Financial attitude, ES= Entrepreneurship Spirit

Exploring Modalities of Rhetorical Moves in Malaysian Travel Brochures Through Multimodal Analysis

Ahlam Muhammed Al-Najhi[1,2], Zalina Mohd Kasim[1]*, Ramiza Darmi[1], Sharon Sharmini[1] and Musaab Alaa Zaidan[3]

[1]*Department of English, Faculty of Modern Languages and Communication, Universiti Putra Malaysia, 43400 Serdang, Selangor, Malaysia*
[2]*Department of English, Faculty of Education, Thamar University, Dhamar 13020, Yemen*
[3]*Department of Computer Science and Technology, Faculty of Computer Science and Information Technology, Universiti Malaya, 50603 Kuala Lumpur, Malaysia*

ABSTRACT

Rhetorical moves refer to text segments employed to communicate a specific purpose effectively. Despite the extensive body of research on the significance of rhetorical moves as a crucial strategy in various genres, the phenomenon of visual shapes such as texts, images, colors, logos, icons, and infographics of moves that sometimes replace the text remains unexplained. The study's objective is to uncover the interplay of visual modalities in the formation of the rhetorical moves found in Malaysian travel brochures. The study employs a multimodal analysis method: Bhatia's (1993–2004) model of Structural Move Analysis was employed to identify the moves in textual modes, and Bateman's (2008) Genre and Multimodality model was employed to identify the moves' visual and graphical modes. During the annual MATTA Fair event in Kuala Lumpur, a collection of 15 travel brochures was obtained, amounting to a total of 39 pages. The findings of the study demonstrate a complex interaction between textual and graphical components. Notably, the study revealed that both textual and graphical modes play a crucial role in shaping rhetorical moves, with a nearly equal proportion observed between the two. The findings presented in this study offer novel insights into the visual presence and modern textuality of rhetorical moves.

Keywords: Genre and multimodality, rhetorical moves, structural move analysis, textual mode, travel brochure, visual mode

INTRODUCTION

Based on classical approaches to rhetorical moves analysis, such as Genre Analysis

and Move Analysis, this study explores the rhetorical moves in promotional genres through a linguistic approach, applying the modern concept of multimodality to these moves. In general, Genre Analysis is a linguistic approach that has three main schools of thought: English for Specific Purposes (ESP), Rhetorical Genre Studies (RGS), and Systemic Functional Linguistics (SFL). This study falls into the category of the ESP approach, targeting specific discourse, which, in this case, is printed media (travel brochures). Specifically, Move Analysis is a method that falls under Genre Analysis. Move Analysis is a text analytical approach developed by Swales (1990) as a fundamental method of Genre Analysis (Moreno & Swales, 2018). It depends on the concept of moves as "discoursal or rhetorical units performing coherent communicative functions in texts" (Swales, 2004, pp. 228–229), which are diverse in linguistic realizations according to the type of genre.

In terms of the promotional genre analysis of multimodal documents, researchers such as Bateman (2008) have used the general term "visual modalities" to refer to how meaning is conveyed through the visual shaping of text segments. It may include, but is not limited to, images, graphics, colors, layout, and typography. Textual and visual modalities play a significant role in the communication of texts as they can convey information, evoke emotions, and contribute to the overall meaning of a text or document in conjunction with other modes, such as textual or visual elements. Existing

research on rhetorical moves (Alhojailan, 2020; Chaidet & Pupipat, 2021; Dumlao & Pitichanoknan, 2020; Razak, 2019) has often neglected the visual aspects of rhetorical moves in promotional genres. This leads to an incomplete interpretation of the communicative purposes conveyed by these moves. This will also lead to not finding an answer as to why a move could be missing on a brochure in the form of text. The potential reason derived from this current study is that the absence of moves in the textual content could be interpreted as their occurrence in visual forms, such as images or logos, rather than in text.

In this study, texts are viewed as functional components that contribute to the overall meaning-making for promotional purposes rather than as semantic units at a micro level. Bateman (2008) argued that extending the Rhetorical Structure Theory (RST) to approach visual components need to consider the surrounding texts as contributors to the overall meaning rather than just verbal language: "The underlying intuition is that just as segments of a text contribute to that text's coherence in systematic and specifiable ways, so can segments of a multimodal document, involving pictures, diagrams and texts, be related analogously also" (Bateman 2008, p. 144). The term "modalities" includes both visual and textual modes. The terms "visual mode" and "graphical mode" are often used interchangeably, but they can have slightly different meanings depending on the context. In general, "graphical mode" specifically refers to the utilization of images, charts,

graphs, and other visual representations to convey a communicative purpose. It is a subset of the broader category of "visual mode," which can include any type of visual element, including images, videos, animations, and other forms of multimedia (Bateman, 2008).

Thus, the main objective of this research is to reveal the various rhetorical moves that occurred in various modes to deliver meanings to the customer. The general significance of such a goal lies in enabling observations that could spark debates on multimodal phenomena. These inspiring assumptions could lead to further hypotheses regarding the materials and strategies of their content. The utilization of multiple analytical approaches (both linguistic and multimodal) in this study has elevated its level beyond what has been achieved by previous genre research studies. More specifically, the research benefits linguistic scholars by providing a potential answer to reported missing moves (Chen, 2017; Yoon & Casal, 2020) and demonstrating the applicability of using the Genre and Multimodality (GeM) model to visually identify moves by answering the study's main question, which is: What are the visual modalities of rhetorical moves that replace text-based moves and could explain the absence of certain moves in textual formats?

LITERATURE REVIEW

Underpinning works such as Swales' (1990) Creating A Research Space (CARS) model, the Generic Structure Potential (GSP) approach proposed by Halliday and Hasan (1985), the move structural analysis model by Bhatia (1993, 2004), and the works of Moreno and Swales (2018) and Connor et al. (1995) have primarily focused on textual modes of writing and their rhetorical generic functions. Visual modes of moves have not received the same level of scrutiny as textual modes.

Despite the considerable body of research on the analysis of rhetorical moves in tourism discourse, a noticeable gap exists in the investigation of rhetorical moves in the context of their multi-mode formation. While previous studies, such as those by Hasan (2015), Ip (2008), and Jalis et al. (2014), have utilized linguistic approaches such as move analysis to examine the linguistic characteristics and functions of rhetorical moves, this current study acknowledges the significance of incorporating visual modes in conjunction with textual move identification.

The scholarly discourse on promotional genres, particularly that of tourism brochures, has delved into the intricate interplay between linguistic and non-linguistic components. Furnama and Rosa (2020) revealed the symbiotic relationship between verbal and visual elements, crafting a potent narrative that not only persuades but also entices readers to engage with tour and travel services. Hassan's (2014) study underscored the pivotal role of linguistic cues and visual imagery in depicting Malaysia's cultural richness, emphasizing the fusion of linguistic and non-linguistic elements for enhancing persuasion.

Visual modes of text hold equal significance to textual modes in facilitating

communicative functions within discourse (Amare & Manning, 2007). Sometimes, textual content is not fully displayed; instead, visual elements are used as a replacement. For instance, Chaidet and Pupipat (2021) found that the link button move replaces the soliciting response move. This move offers detailed contact information through hyperlinked markers rather than plain text. This point highlights the reason why a move could sometimes appear to be missing. In fact, textual modes are not always helpful in representing communicative ideas, especially when calling for action, such as seeking a response from customers. This can be effectively communicated through the logos of social media icons and usernames alone, without any further textual explanation.

Recent studies, such as Watanabe's (2021) study of Chinese newspapers, have emphasized the inseparable nature of visual and textual elements, underscoring the indispensable need to analyze both for a comprehensive understanding of promotional genre strategies. This critical review highlights the multidimensional nature of rhetorical moves in tourism discourse, particularly in brochures. It urges scholars to consider the complex integration of linguistic and visual elements within broader socio-cultural and economic contexts. In methodological terms, move analysis has been instrumental in dissecting the rhetorical strategies within promotional genres. However, this method of addressing moves with multimodal content has proven inadequate in explaining missing moves (Chen, 2017; Yoon & Casal, 2020) or in elucidating moves in other modalities, such as images and logos. This method is meant for pure text analysis within one mode, mostly the textual mode. Thus, the present study aims to find out possible missing moves or missing moves in verbal mode that have been replaced by visual moves to accomplish the move's communicative purpose.

METHODS

Rhetorical moves are sentences or groups of sentences that serve typical communicative intentions that are always subservient to the overall communicative purpose of a genre. Moves are associated with communicative purpose and constitute the overall criteria of a given text genre in the organization of text segments into components (Bhatia, 1993). Several models have been proposed in the literature for analyzing moves in promotional discourse, including those by Fairclough (1993), Kathpalia (1992), and Swales (1990). However, the primary objective of the present study was to identify moves based on the modalities that lead to conveying the communicative purpose of the move. Therefore, 15 brochures (39 pages) were collected from the Putra World Trade Centre (PWTC) in Kuala Lumpur. The collection took place between 10 a.m. and 9 p.m., utilizing a purposeful sampling technique to select the brochures. Purposeful sampling is commonly regarded as a suitable method for qualitative research endeavors that aim to obtain data rich in information for a particular research question (Patton, 2002).

Next, a top-down approach was employed, using Bhatia's (1993, 2004) nine-move structural model of the promotional genre as a method for identifying the moves. This nine-move model, M1–M9, has been widely used in relevant studies such as L. Y. Yong and Mei (2018) and Chaidet and Pupipat (2021). M1 is the headline, which is typically featured as a catchy textual segment or a full sentence at the beginning of a promotional text, designed to grab the reader's attention and encourage continued reading. M2 targets the market and involves identifying and describing the target audience. Moreover, it often includes demographic details or specific characteristics of the intended market. M3 justifies the product or service, providing reasons why the product or service is beneficial or superior and highlighting key features, benefits, or unique selling points. M4 contains the details of the product or service and offers a comprehensive description, including specifications and technical details, giving the audience a clear understanding of what is being promoted. M5 establishes credentials that build credibility through awards, certifications, expert endorsements, or other forms of social proof. M6 is the typical user endorsement that enhances the product's appeal by sharing testimonials from satisfied customers. M7 offers incentives, including special offers or discounts, to encourage the reader to take action. M8 is where pressure tactics create a sense of urgency, often through limited-time offers or the implication of scarcity. Finally, M9, which

solicits a response, aims to provoke a specific action, such as making a purchase, contacting the company, or visiting a website.

Additionally, using Bateman's (2008) Genre and Multimodality (GeM) model to deconstruct the content of the brochure helps to meticulously deconstruct the moves and label them based on their contextual function, form, and position in the page layout. The visual formation of rhetorical moves can be identified using all linguistic and multimodal approaches possible. Bhatia's (1993, 2004) model was selected due to its extensive usage in the analysis of promotional discourse, as indicated by recent citations (Barabas, 2018; L. Y. Yong & Mei, 2018) and previous empirical studies on the identification of rhetorical moves (Henry & Roseberry, 2001; Huang, 2014). This selection is justified by the practical applicability and reliability of Bhatia's model in discerning rhetorical moves in promotional discourse through functional analysis, rendering it a suitable approach for the objective of this research. GeM was used in several current studies that involve analysis beyond merely pure texts with relation to visual identification, as in the studies of Bateman et al. (2001), Hiippala (2012), and Thomas (2014).

The rhetorical moves were categorized by the type of modality, textual or visual modes, and frequency of occurrence. The researcher then tabulated the analyzed data based on the move type and its mode of occurrence in percentages. Each move is labeled and categorized as textual or

visual and then coded accordingly. The outcome was quantitative data describing the frequency of each type of move and its corresponding mode. In doing so, the researcher could clearly see these modes' existence as a form of the moves themselves.

The concept of a "move" has been defined as a set of text segments with a communicative function. Similarly, visual elements can also be considered a move when they serve a communicative purpose. A sentence was considered a part of a move unless it contained italicized, highlighted, links, scan codes, shapes, contrasted colors, or bold words. The visual mode identification of each move involves a description of the Base Layer as found in the Genre and Multimodality (GeM) model. This layer is where all components on the page are taken into account. Textual and visual elements in moves can be labeled as moves. For example, in M1, as explicitly annotated in Figure 4, the "headline" is presented as the official logo, serving as the title of the hotel. Although the designer could have used the text "Lotus Hotel" as the title, they chose to use the logo instead, as it incorporates both a flower illustration and the word "Lotus." During the analysis, it was observed that rhetorical moves can manifest in both textual and visual modes. For instance, the occurrence of M7, which involves offering incentives, was observed in photos meant to motivate the reader as the primary communicative purpose.

Three coders participated in recording the agreement percentages for move identification and functionality. The researchers engaged in tasks of segmentation, labeling, and identifying functions. Following these tasks, the agreement among coders was checked through the Kappa value to ensure the level of agreement and accuracy. The coders met the minimum qualifications, training, and knowledge required for this analysis. The coding annotation scheme was move + type. During the move analysis, the identification was based on three main criteria: the functionality of the move, the position of the move, and the typography of the move. As some degree of subjectivity is sometimes unavoidable (Holmes, 1997), inter-rater reliability procedures were implemented to minimize subjectivity in the rhetorical moves and relations coding process (Crookes, 1986; Pho, 2008). The inter-rater reliability process involved weekly meetings to discuss and label the raw data as part of a training and refresher exercise on the basic principles of the analysis. Data were regularly checked among the two raters and the researcher to record the level of similarity. The final draft indicated that the kappa value result of moves identification was 0.662, which falls between 0.61 and 0.80, signifying substantial agreement (Landis & Koch, 1977).

RESULTS AND DISCUSSIONS

The frequency of the modalities of rhetorical moves in linguistic and visual modes exhibited similarities in their presence and proportion. Table 1 illustrates that among the typical nine moves suggested by Bhatia (1993, 2004), only five were identified as presented on the pages of the brochures.

Table 1

Rhetorical moves modalities' occurrence (visual/textual modes) in the 39 pages as a sample of Malaysian travel brochures

Rhetorical Moves	Textual Modes			Visual Modes		
	No	%	type	No	%	type
M1 Headline	83	19	text	0	0	
M2 Targeting the Market	0	0		0	0	
M3 Justifying the Product or Service	0	0		0	0	
M4 Detailing the Product or Service	144	33	text	127	29	images, tables, diagrams, logos, slogan
M5 Establishing Credentials	42	10	text	139	32	logos, slogans
M6 Typical User Endorsement	0	0		0	0	
M7 Offering Incentives	70	16	text	48	11	images, lines
M8 Using Pressure Tactics	44	10	text	28	6	images, lines
M9 Soliciting Response	52	12	text	91	21	icons, numbers, maps
Total Move instances	435	100		433	100	

As illustrated in Table 1, there is a notable variation in the frequency of rhetorical moves within the selected travel brochures labeled B1 for brochure 1 to B15 for brochure 15. M1 (Headline) appears 83 times in the written textual mode, constituting 19% of all textually realized rhetorical moves in the dataset, but is entirely absent in the visual mode. M2 (Targeting the Market), M3 (Justifying the Product or Service), and M6 (Typical User Endorsement) do not appear in the analyzed data.

M4 (Detailing the Product or Service) is the most frequent, with 144 textual instances (33% of all textual realizations) and 127 visual instances (29% of all visual realizations), appearing in forms such as images, tables, diagrams, and logos. M5 (Establishing Credentials) is represented textually 42 times (10% of all textual instances) and visually 139 times (32% of

all visual instances), primarily as logos and slogans. M7 (Offering Incentives) appears 70 times textually (16% of total) and 48 times visually (11% of total), depicted through images and lines.

M8 (Utilizing Pressure Tactics) is observed 44 times textually (10% of the total) and 28 times visually (6% of the total), mainly in the form of images. Lastly, M9 (Soliciting Response) is present in 52 textual cases (12% of the total) and 91 visual cases (21% of the total), represented by icons, numbers, and maps.

In terms of missing moves, there is a noticeable absence of M2 (Targeting the Market), which constitutes 0%. Likewise, M3 (Justifying the Product or Service) and M6 (Typical User Endorsement) each constitute 0%, which can be attributed to a variety of reasons. For example, cultural differences can influence consumer behavior and attitudes toward advertising

(Hofstede & Bond, 1988). Social norms and conformity are often more effective in marketing (Dauber et al., 2012). Target audience preferences through television ads (Belch & Belch, 2017). In some cultures, certain marketing techniques may not be as effective or acceptable as in other countries. For example, M2 (Targeting the Market) is typically achieved through events, festivals, shows, or targeted advertising distribution. Regarding the findings of Teo (2008) and M. M. Yong (2001), targeting the market is a crucial step that focuses on a select group of individuals most in need of the advertised products or services. In this research, it was observed that this intention was not explicitly communicated through any linguistic statements in the brochures. For example, there was no clear identification of the target audience, no appeal to human self-perception, no use of second-person pronouns, and no highlighting of unique selling points. However, the promotion was achieved through social events at the fair, where agents distributed brochures to attendees searching for deals and promotions.

Table 1 illustrates that rhetorical moves in visual modes are similar to those in textual modes regarding their proportion and functional accomplishment. Specific communicative functions are also achieved through the visual mode. Bateman (2008) states that tables, slogans, and numbers are graphical text elements. While tables and numbers provide information through the organization and display of data, slogans often communicate messages or ideas

through creative or symbolic visuals. These textual forms can be utilized alongside written or spoken language to amplify the overall significance and influence of a message. It is important to note that the visual modes of the texts can sometimes be considered texts but in certain graphical forms. For example, the term "M7," which represents incentives, is commonly realized in written texts and numerical formats. However, according to Povoroznyuk (2022), print advertisements allow for the consideration that visual and verbal elements may have varying degrees of influence in conveying the intended message to the recipient. This suggests that the text can be regarded as a visual tool for delivering the message in advertising, establishing a strong connection with semiotics, and thus functioning as an independent means of transmitting information. Additionally, a control group of images in print ads was identified to demonstrate that the images alone can fulfill functions that entice the recipient to engage in specific actions. Figure 1 suggests that M1 (Headline) "Adventure Packages" is significant in capturing the customer's attention and generating interest in the material.

The stark contrast between the white color of M1 and the red background may enhance the visibility of the texts, thereby effectively capturing the viewer's attention. This deliberate choice of color scheme is crucial in drawing attention to the content. This statement aligns with L. Y. Yong and Mei's (2018) findings, emphasizing the significance of attention-

Figure 1. M1 and M4 in the B8 brochure in textual/graphical mode

grabbing and visually appealing taglines as headlines. The analyzed data found that M1 serves the purpose of naming places, emphasizing activities, promoting services, and showcasing products. Previous studies have labeled this action as "Overview of the Service Provider" (Barabas, 2018), "Titling" (Xiong, 2012), "Identifying Product and Purpose" (Labrador et al., 2014), and "Introductory Material" (Nodoushan & Montazeran, 2012). In addition, it was observed that logos sometimes accompany M1. The primary objective of the designer is to highlight the names of the featured destinations rather than solely focusing on showcasing the logo symbol.

Furthermore, Figure 1 illustrates the presence of M4 in both textual and visual representations, depicted in the form of polygon shapes. The textual mode showcases a package encompassing various components, such as accommodation and car rental priced at RM 179, and opportunities to explore "Eagle Feeding, Tasik Dayang Bunting, and Pulau Beras Basah." Additionally, the entrance fee for both Malaysian and foreign visitors is prominently displayed. Moreover, in this example, the visual modes of M4 consist of seven images depicting various destinations and activities. It is accompanied by a circular shape that displays the net price of the items included in the package.

The prevalence of M4, whether in textual or graphical modes, implies that the primary aim of the content in these brochures is to offer comprehensive and specific information pertaining to the travel packages and services provided by travel agencies. The prioritization of this action suggests that the designer considers the primary focus of the customer to be

to acquire comprehensive information regarding the various types of products or services offered. Hence, it is imperative to furnish comprehensive information to help potential customers understand the advantages and characteristics of the product. Such findings align with the results reported by L. Y. Yong and Mei (2018), who emphasized the importance of M4 in providing a comprehensive description of the product to customers. The move is referred to as the Enhancer (Nugroho, 2009) and Describing the Product (Labrador et al., 2014). The utilization of visual and textual modes was frequently observed in all of the brochures analyzed. Figure 2 provides an example of M7 (Offering Incentives) in textual modes, where users who register on the Cuti website will receive 800 free Cuti coins.

Incentives are rewards or benefits given to customers or potential customers to encourage them to take a specific action, such as purchasing or booking a trip. In marketing, incentives are commonly used to

motivate or persuade customers to purchase a product or service. This can include discounts, gifts, loyalty rewards, or other bonuses. In the context of travel brochures, incentives are often provided to attract customers and encourage them to select a specific destination, hotel, or tour package. This could include upgrades, free meals, or other perks that enhance the overall travel experience.

M9 (Soliciting Response) is another move found in the analyzed brochures. It seems to encourage the reader or listener to take action or respond to a particular request or offer. Its primary function is to elicit a response or reaction from the recipient, such as a purchase, inquiry, or engagement. Phrases such as "Contact us for more information," "Get in touch with us," "Do not hesitate to reach out," "Let us know your thoughts," "Feel free to ask any questions," and "Call us now" are commonly used in M9. Figure 3 shows M9 in a textual mode that encourages potential customers to contact the hotel for more

Figure 2. M7 (Offering Incentives) from B3 brochure in textual mode

information about wedding preparation details and prices rather than providing a direct contact number without adding any polite word of request or imperative to take action, such as "please."

By using this move, the hotel indicates that they are available to answer any questions and provide further information, which can help build trust and instill confidence in potential customers. From the analyzed data, it has been noticed that M5 (Establishing Credentials) is missing in textual forms, and instead, it has mostly occurred in graphical shapes such as logos and slogans. Establishing a brand identity can make the brochure more recognizable and memorable. Logos and brand colors play a crucial role in establishing the identity of a brochure, making it more recognizable and memorable. Figure 4 shows that M5 is presented on an orange and yellow background to attract attention.

Figure 3. M9 (Soliciting Response) from B4 brochure in textual mode

Figure 4. M5 (Establishing Credentials) from brochure B10 in graphical mode

Ahlam Muhammed Al-Najhi, Zalina Mohd Kasim, Ramiza Darmi, Sharon Sharmini and Musaab Alaa Zaidan

Aaker (1991) found that consistent and distinctive logo colors may enhance brand recognition and recall. This compensates for the missing verbal presentation of this move and accomplishes its communicative purpose, which is gaining attention and understanding. van Grinsven and Das (2016) confirmed that the incorporation of visual identity elements, such as logos and color schemes, can improve brand recognition and enhance the perceived professionalism of a company or organization.

The data analysis reveals that the promotional genre of Malaysian travel brochures utilizes different modalities to present the missing rhetorical moves in textual form. Texts, contrasting colors, varying sizes, tables, logos, images, icons, shapes, and diagrams are used to accomplish the communicative purpose and to attract customers. According to Leong et al. (2010), customer satisfaction is enhanced when images and graphical representations are used instead of plain text. From the analyzed data, Figure 5 displays the most common visual and graphical modes observed in the formation of rhetorical moves in Malaysian travel brochures. These modes are logos, images, tables, and diagrams for M4. Logos and slogans are modes of M5. Images, numbers, and lines are modes of M7. Bold fonts and bright colors are modes of M8. Finally, icons are the modes of M9.

CONCLUSION

The multimodal analysis of rhetorical moves in Malaysian travel brochures reveals a nuanced interplay between textual and graphical modes. Notably, the modes were integral in shaping rhetorical moves, with a nearly equal distribution. Rhetorical moves were strategically employed in textual modes
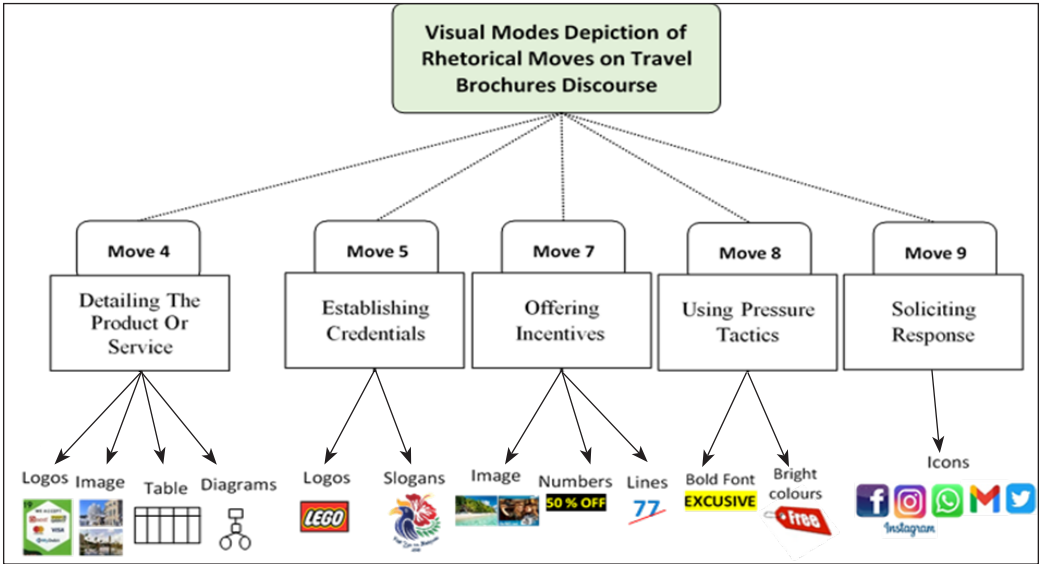
Figure 5. Visual modes depiction of rhetorical moves in Malaysian travel brochures

across M1, M4, M5, M7, M8, and M9. This mode manifests a richness of vocabulary and language expertise, demonstrating the careful crafting of persuasive messages.

In contrast, visual and graphical modes were prominently utilized in moves M4, M5, M7, M8, and M9. M4, a pivotal move, was particularly diverse, manifesting through a plethora of graphical mediums such as images, tables, diagrams, and logos. Similarly, M5 primarily utilized logos and slogans, showcasing a reliance on visual symbols and concise phrases for impactful communication. M7 utilized images and lines, combining visual elements to evoke specific emotions and associations. M8 relied solely on imagery to convey its message, emphasizing the power of visual storytelling. Finally, M9 creatively incorporated icons and numbers, leveraging symbolic representation and numerical data to engage the audience.

This study sheds light on the variation of modalities in the rhetorical moves within the marketing genre, specifically in travel brochures, and contributes significantly to the ongoing discourse analysis studies regarding contemporary printed communication. The findings challenge existing rhetorical move analysis, providing fresh perspectives on the visual formation of rhetorical moves. As the marketing landscape continues to evolve, understanding these dynamic interactions between textual and graphical modes becomes imperative for effective communication strategies, making this research a valuable addition to discourse analysis.

Recommendations for Future Research

The study provides an insightful description of several modalities used in rhetorical moves in Malaysian travel brochures. It shows that rhetorical moves occur in visual modes with quite an equal occurrence in textual modes. This work contributes to the ongoing research on multimodal documents and rhetorical move analysis. It opens up further discussions on various modalities of rhetorical moves beyond text. Overall, this study provides valuable information for researchers and practitioners interested in understanding how moves are formed in promotional materials and how these moves can be effectively designed when applied in various modes that make the texts even more attractive and understandable. Future studies could delve into how rhetorical moves differ in modality applications across cultures. Investigating cultural nuances in promotional materials can provide valuable insights into the diverse strategies employed in different regions.

ACKNOWLEDGEMENTS

REFERENCES

Aaker, J. (1991). *The negative attraction effect? A study of the attraction effect under judgment and choice.* ACR North American Advances.

Alhojailan, A. I. (2020). Genre analysis of Saudi universities' websites: Analysis of rhetorical

moves and discursive strategies for marketization purposes. *International Journal of English Linguistics*, *10*(6), 65-77. https://doi.org/10.5539/ijel.v10n6p65

Amare, N., & Manning, A. (2007). The language of visuals: text + graphics = visual rhetoric tutorial. *IEEE Transactions on Professional Communication, 50*(1), 57-70. https://doi.org/10.1109/TPC.2006.890851

Barabas, C. D. (2018). Rhetorical moves and the functional constituent of process in higher education institutions' promotional materials. *The Asian ESP Journal, 14*(1), 364-390.

Bateman, J. A. (2008). *Multimodality and Genre: A foundation for the systematic analysis of multimodal documents*. Palgrave Macmillan. https://doi.org/10.1057/9780230582323

Bateman, J. A., Kleinz, J., Kamps, T., & Reichenberger, K. (2001). Towards constructive text, diagram, and layout generation for information presentation. *Computational Linguistics*, *27*(3), 409-449. https://doi.org/10.1162/089120101317066131

Belch, G. E., & Belch, M. A. (2017). *Advertising and promotion: An integrated marketing communications perspective* (11th ed.). McGraw-Hill Education.

Bhatia, V. K. (1993). *Analysing genre: Language use in professional settings.* Taylor & Francis. https://doi.org/10.4324/9781315844992

Bhatia, V. K. (2004). *Worlds of written discourse: A genre-based view*. Bloomsbury Academic. https://doi.org/10.5040/9781474212038

Chaidet, C., & Pupipat, A. (2021). Move analysis of women and men's personal care product online advertisements. *Journal of Studies in the English Language*, *16*(2), 22-51.

Chen, S. (2017). Disciplinary variations in academic promotional writing: The case of statements of purpose. *Functional Linguistics*, *4*, Article 4. https://doi.org/10.1186/s40554-017-0041-9

Connor, U., Davis, K. W., & De Rycker, T. (1995). Correctness and clarity in applying for overseas jobs: A cross-cultural analysis of US and Flemish applications. *Text & Talk*, *15*(4), 457-476. https://doi.org/10.1515/text.1.1995.15.4.457

Crookes, G. (1986). *Task classification: A cross-disciplinary review* (Technical Report No. 4). Center for Second Language Classroom Research, Social Science Research Institute, University of Hawaii at Manoa.

Dauber, D., Fink, G., & Yolles, M. (2012). A configuration model of organizational culture. *SAGE Open*, *2*(1). https://doi.org/10.1177/2158244012441482

Dumlao, R. P., & Pitichanoknan, W. (2020). "Glocalization" and intercultural representation in Filipino TV commercials: A multidimensional discourse analysis. *Journal of Intercultural Communication*, *20*(2), 72-88. https://doi.org/10.36923/jicc.v20i2.306

Fairclough, N. (1993). Critical discourse analysis and the marketization of public discourse: The universities. *Discourse & Society*, *4*(2), 133-168. https://doi.org/10.1177/0957926593004002002

Furnama, S., & Rosa, R. N. (2020). A multimodal analysis of tourism brochures for advertising tourist attraction in Mandeh Island, West Sumatra. *English Language and Literature, 9*(4), 446-457. https://doi.org/10.24036/ell.v9i4.110075

Halliday, M. A. K., & Hasan, R. (1985). *Language, context and text: Aspects of language in a social-semiotic perspective.* Deakin University Press.

Hasan, M. (2015). *Promotional activities in the strategic tourism development of lapland: Case study: Tour operator's appearance in social media* [Degree thesis, Centria University of Applied Sciences]. http://www.theseus.fi/handle/10024/96778

Hassan, H. (2014). The representation of Malaysian cultures in tourism brochures. *Procedia - Social*

and Behavioral Sciences, *118*, 140-151. https://doi.org/10.1016/j.sbspro.2014.02.019

Henry, A., & Roseberry, R. L. (2001). A narrow-angled corpus analysis of moves and strategies of the genre: 'Letter of Application.' *English for Specific Purposes*, *20*(2), 153-167. https://doi.org/10.1016/s0889-4906(99)00037

Hiippala, T. (2012). The localisation of advertising print media as a multimodal process. In W. L. Bowcher (Ed.), *Multimodal texts from around the world* (pp. 97-122). Palgrave Macmillan. https://doi.org/10.1057/9780230355347_5

Hofstede, G., & Bond, M. H. (1988). The Confucius connection: From cultural roots to economic growth. *Organizational Dynamics*, *16*(4), 5-21. https://doi.org/10.1016/0090-2616(88)90009-5

Holmes, J. (1997). *An introduction to sociolinguistics.* Longman.

Huang, D. Q. (2014). Genre analysis of moves in medical research articles. *Stylus, 5*, 7-17. https://cah.ucf.edu/writingrhetoric/wp-content/uploads/sites/27/2019/10/Stylus_5_1_Huang.pdf

Ip, J. Y. L. (2008). Analyzing tourism discourse: A case study of a Hong Kong travel brochure. *LCOM papers*, *1*, 1-19.

Jalis, M. H., Che, D., & Markwell, K. (2014). Utilising local cuisine to market Malaysia as a tourist destination. *Procedia - Social and Behavioral Sciences*, *144*, 102-110. https://doi.org/10.1016/j.sbspro.2014.07.278

Kathpalia, S. S. (1992). *A genre analysis of promotional texts* [Doctoral thesis, National University of Singapore]. https://scholarbank.nus.edu.sg/handle/10635/203575

Labrador, B., Ramon, N., Aláiz-Moretón, H., & Sanjurjo-González, H. (2014). Rhetorical structure and persuasive language in the subgenre of online advertisements. *English for Specific Purposes*, *34*, 38-47. https://doi.org/10.1016/j.esp.2013.10.002

Landis, J. R., & Koch, G. G. (1977). The measurement of observer agreement for categorical data. *Biometrics*, *33*(1), 159-174. https://doi.org/10.2307/2529310

Leong, Q. L., Shahrim, A. K. M., Othman, M., Adzahan, N. M., & Ramachandran, S. (2010). Relationships between Malaysian food image, tourist satisfaction and behavioural intention. *World Applied Sciences Journal*, *10*(10), 164-171.

Moreno, A. I., & Swales, J. M. (2018). Strengthening move analysis methodology towards bridging the function-form gap. *English for Specific Purposes*, *50*, 40-63. https://doi.org/10.1016/j.esp.2017.11.006

Nodoushan, M. A. S., & Montazeran, H. (2012). The book review genre: A structural move analysis. *International Journal of Language Studies, 6*(1), 1-30.

Nugroho, A. D. (2009). The generic structure of print advertisement of Elizabeth Arden's INTERVENE: A multimodal discourse analysis. *K@Ta: A Biannual Publication on the Study of Language and Literature, 11*(1), 70-84. https://doi.org/10.9744/kata.11.1.70-84

Patton, M. Q. (2002). Two decades of developments in qualitative inquiry. *Qualitative Social Work*, *1*(3), 261-283. https://doi.org/10.1177/1473325002001003636

Pho, P. D. (2008). Research article abstracts in applied linguistics and educational technology: A study of linguistic realizations of rhetorical structure and authorial stance. *Discourse Studies*, *10*(2), 231-250. https://doi.org/10.1177/1461445607087010

Povoroznyuk, R. (2022). Intersemiotics of multimodality: Advertisement in translation. *Journal of Language and Linguistic Studies*, *18*(Special Issue 2), 1141-1164.

Razak, N. A. (2019). Mosque tourism in Malaysia: A marketing perspective. *International Journal of Social Science Research, 1*(2), 108-120.

Swales, J. (1990). *Genre analysis: English in academic and research settings.* Cambridge University Press.

Swales, J. M. (2004). *Research genres: Explorations and applications*. Cambridge University Press.

Teo, L. M. (2008). *Genre analysis of advertisements of skin care products* [Doctoral dissertation, Universiti Malaya]. http://dspace.fsktm.um.edu.my/handle/1812/436

Thomas, M. (2014). Evidence and circularity in multimodal discourse analysis. *Visual Communication*, *13*(2), 163-189. https://doi.org/10.1177/1470357213516725

van Grinsven, B., & Das, E. (2016). Logo design in marketing communications: Brand logo complexity moderates exposure effects on brand recognition and brand attitude. *Journal of Marketing Communications, 22*(3), 256-270. https://doi.org/10.1080/13527266.2013.866593

Watanabe, K. (2021). Latent semantic scaling: A semisupervised text analysis technique for new domains and languages. *Communication Methods and Measures, 15*(2), 81-102. https://doi.org/10.1080/19312458.2020.1832976

Xiong, T. (2012). Discourse and marketization of higher education in China: The genre of advertisements for academic posts. *Discourse & Society*, *23*(3), 318-337. https://doi.org/10.1177/0957926511433786

Yong, L. Y., & Mei, C. C. Y. (2018). A genre and multimodal analysis of milk formula advertisements in a local parenting magazine. *LSP International Journal*, *5*(2), 57-76. https://doi.org/10.11113/lspi.v5n2.79

Yong, M. M. (2001). *A genre analysis of advertisements in a local newspaper* [Doctoral dissertation, Universiti Malaya]. http://studentsrepo.um.edu.my/id/eprint/1477

Yoon, J., & Casal, J. E. (2020). Rhetorical structure, sequence, and variation: A step-driven move analysis of applied linguistics conference abstracts. *International Journal of Applied Linguistics*, *30*(3), 462-478. https://doi.org/10.1111/ijal.12300

Strategic Human Resource Cadre Development in *Pesantren*: A Roadmap to Organizational Resilience

Muhammad Anggung Manumanoso Prasetyo[1]*, Fadhlur Rahman[2], Muhammad Haekal[3] and Agus Salim Salabi[1]

[1]*Education Management, Faculty of Education and Teacher Training, Institut Agama Islam Negeri Lhokseumawe, 24352, Indonesia*
[2]*English Language Teaching, Faculty of Education and Teacher Training, Institut Agama Islam Negeri Lhokseumawe, 24352, Indonesia*
[3]*School of Curriculum, Teaching and Inclusive Education, Monash University, 3800, Australia*

ABSTRACT

This research aims to examine the succession model implemented by contemporary *pesantren* to secure the long-term viability of the *pesantren* organization. The research introduces a novel approach by developing a modern *pesantren* regeneration model through a comparative analysis of exemplary *pesantren* institutions under the Islamic teacher cadre education system. The study used a qualitative paradigm with a grounded method. Data were collected through interviews with five key informants, including *pesantren* authorities, administrators, caretakers, and senior teachers. The findings revealed that *pesantren* regeneration was classified into educational and academic regeneration. The determination of cadres is carried out through a series of selection processes with the main focus on loyalty, academic ability, and the main understanding of *pesantren's* values. The regeneration pattern prioritizes the institutional system over individual or sectoral needs. In addition to academic competence, the academic regeneration program aims to foster critical thinking, aspiration, and independence. Leadership regeneration focuses on the technical aspects of leadership, such as building relationships with members, task delegation, and power dynamics. The research implies that *pesantren*, or Islamic boarding schools, should be regarded as miniature societies. This means that their longevity and success should be based on the collective efforts and preparation of the cadres rather than being solely dependent on the individual figure of the *Kyai*, or *pesantren* principal.

Keywords: Cadre development, cadre leadership, human resource development, organizational effectiveness, *pesantren* effectiveness, strategic human resource, sustainability organization

INTRODUCTION

Historically, *pesantren* in Indonesia has been the foremost institution compared to other educational establishments such as schools or *madrasas* (Azra, 2018). The government formally recognized the existence of *pesantren* in 2019 through the State Constitution of the *Pesantren* (A. Malik, 2023; Tolchah & Mu'ammar, 2019). The concept of *pesantren*-based education is widely used throughout Asia, particularly in Southeast Asia (Buang & Chew, 2014). *Pesantren* in Indonesia has distinct characteristics, including being a legacy educational institution passed down from generation to generation (Kawakip, 2020). *Pesantren* is the same as Islamic community organizations like Nahdatul Ulama and Muhammadiyah, and they are evidence of the existence of ulama (Islamic scholars; Lukens-Bull, 2019; Sakai, 2014).

Indonesia, as a Muslim-majority nation, is a representation of Islamic culture. Islamic culture is manifested through educational institutions known as *pesantren*, which are spread across 36 provinces in Indonesia. Therefore, *pesantren* is said to be Indonesia's cultural heritage (Masqon, 2011; Raihani & Drysdale, 2013). Through its students, *pesantren* also contributed to the country's independence (Woodward, 2015). Regrettably, the government only officially authorized *pesantren* in 2019 through the *pesantren*'s law (Khairani et al., 2021). This reinforcement provides *pesantren* leaders access to accelerate policy and governance innovation toward a sustainable organization (Azro'i & Fuaidi, 2020).

The problem encountered by *pesantren* is around the concept of organizational sustainability (Azra, 2018; Evans et al., 2017). *Pesantren* is strongly associated with the devotion to a *Kyai* (the principal of *pesantren*) figure. As a result, the passing of a *Kyai* often leads to diminished productivity or even operational disruptions within a *pesantren*. This gap might be characterized as the challenge of developing the human resource cadre. Only a few *pesantren* are able to effectively implement the development of human resources in terms of leadership and academics (Songgirin, 2020; Susilawati & Misbah, 2022).

The quality of *pesantren* is seen through the systems implemented in management and infrastructure (Sanusi et al., 2021). The management of educational institutions is related to the instilling of systems (M. A. Gunawan et al., 2023). Meanwhile, the system contains values; therefore, it requires people who understand the values of an organization. For this reason, efforts are needed to maintain superior resources within the organization through a human resource retention strategy known as the cadre system (Maslani et al., 2023; Zarkasyi, 2015). Cadre recruitment can also be carried out through internal selection with criteria determined by the institutional management. Unfortunately, educational institutions are experiencing a crisis of human resources who comprehend organizational values integrally.

This research aims to determine the *pesantren*'s human resource cadre development system model to ensure

pesantren sustainability. The effectiveness of human resource cadre development also indicates the types of leadership cadre management and academic cadre development. The research also examines the correlation between cadre formation and the quality of *pesantren* on an ongoing basis. The management aspects studied in the research focus on the role of leadership in managing the *pesantren* cadre development system.

This research has a rather specific discussion regarding *pesantren*'s management aspects. In general, research on *pesantren* educational management discusses bullying in *pesantren* (Alwi et al., 2023), *eco-pesantren* (Subaidi et al., 2023), *pesantren* based management (Basori et al., 2023), *pesantren* and organizational culture (Alam, 2018), *pesantren* curriculum (Fadhli et al., 2024), *pesantren* digitalization (Mustas, 2021; Wargadinata et al., 2019), *pesantren* leadership styles (Karim et al., 2022; Samsu et al., 2021), *pesantren* local wisdom (Muslim et al., 2024), *pesantren* quality (Prasetyo, 2022; Zakariyah, 2024), *pesantren* social entrepreneurship (Fazlurrahman et al., 2022; Sarwenda et al., 2024), *pesantren*-based business cooperation, and sustainable development goals (Zaki et al., 2022) and *pesantren* waqf (Hapsari et al., 2024; Medias et al., 2022).

Various studies on *pesantren*'s human resource cadre development have been carried out, yet they need to be more extensive in discussing academic cadre management models (Ma`arif et al., 2023; Nilan, 2009) and designs of human resource empowerment models (I. Gunawan et al., 2021). Aikens et al. (2016) and Pauw et al. (2015) asserted that organizational sustainability encompasses enhancing infrastructure and underscores the significance of human resources as fundamental to organizational operations. However, this research discusses the theme of *pesantren*'s human resource cadre development system. Apart from that, organizational sustainability is a crucial issue that needs to be studied profoundly.

In the *pesantren* education system, as articulated by Zainal and Zarkasyi, *pesantren* regeneration encompasses the execution of educational and managerial functions, which involve stages such as cadre planning, cadre organization, development of institutional accessibility, cadre evaluation, and cadre projection for organizational sustainability (Zainal et al., 2022; Zarkasyi, 2020). Human resource cadre development is an effort to create and maintain the quality of *pesantren* (Erihadiana & Jahari, 2018; Sakhiyya & Mulya, 2023). Thus far, *pesantren* has been synonymous with the role of a *Kyai*; thus, it is unsurprising that when a *Kyai* dies, the quality of the *pesantren* declines and, at some point, stops operating. This phenomenon is a consideration for the researcher when determining the issue of *pesantren*'s human resource cadre development. The reason is that several studies.

METHOD

This study employs a qualitative approach utilizing a grounded methodology.

Researchers employ a method of analysis to investigate the meaning and comprehend a phenomenon in a *pesantren* to derive a relevant theory. The research took case studies of three modern *pesantren* in North Sumatra and Aceh, Ar-Raudlatul Hasanah Pesantren in Medan City, Darul Arafah Raya in Deli Serdang Regency, Dayah Darul Amin in Southeast Aceh. The selection of the research locations is based on scientific considerations, i.e., the heterogeneity and quality. The heterogeneous element pertains to the modern *pesantren*, which serves as the research site and possesses an identical genealogy. All three are alumni *pesantren* of Gontor. Conversely, qualitative considerations exist regarding the criterion for overseeing *pesantren* in the area. Considering the superior quality and governance of these *pesantren*, an illustrative model for the development of *pesantren* can be adopted in accordance with the aims of the grounded method for theory construction. Primary sources of information comprised of administration officers, several pre-service teachers, *pesantren* leaders, and teacher coordinators served as crucial informants for this study.

The grounded theory procedure has become one of the most influential when generating theory according to the researcher's goals and principles (Charmaz & Thornberg, 2021; Morse et al., 2016). Operationally, research is carried out in a series of stages. First is the data collection stage; in this aspect, the researcher explores data related to implementing the human resource cadre development program. The research questions were organized around four major themes: Leadership aspects that look into the role and style of leaders in shaping *santri*. Aspects of the recruitment system or process that investigate the methods and criteria for selecting cadres. The evaluation process demonstrates criteria for identifying indicators of successful regeneration. The focus of training and development is on the training programs that were implemented to equip *santri*. Regarding the problem of social dynamics, it comprehends the interaction between *santri* and administrators. By identifying these themes, the focus of data collection will become clearer, allowing for a more in-depth analysis of the regeneration process in *pesantren*.

The grounded approach used in this study emphasizes research findings based on *pesantren* communities' real-life observations. This investigation identifies a dynamic regeneration model influenced by the values and practices of the Pesantren Darul Arafah (est. 1986), Ar Raudlatul Hasanah (1982), and Darul Amin (2007), which are chosen as the research subjects. These *pesantren* are prominent in Aceh and Sumatra, having dedicated decades to establishing cadre development systems.

Documentation of observations (in the form of daily notes) related to the cadre regeneration process from 2015 to 2024. Daily notes are important data sources for documenting the interactive dynamics of discourse, planning, policy, and regeneration program execution. Interviews and document analysis were then used as part

of the triangulation process. The procedure increased the validity of the findings by comparing data from various sources to identify emerging themes and patterns. Furthermore, systematic documentation improves methodological transparency by allowing researchers to clearly articulate data collection and analysis methods, increasing the credibility of research findings on regeneration in *pesantren*. Data triangulation includes the results of teacher deliberations related to cadre-regeneration policies, which are then validated through interviews and monitoring evaluative records of cadre-learning outcomes. The approach demonstrates that the cadre development system in *pesantren* extends beyond technical training to establish a culture of sacrifice, sincerity, and loyalty among prospective cadres.

RESULT AND DISCUSSION

The Urgency of *Pesantren*'s Human Resource Cadre Development

Pesantren's human resource cadre development focuses on leadership and academics. Muslim et al.'s (2024) and Komariah and Kurniady's (2017) research results show *pesantren*'s sustainability by preparing them for higher positions and training their replacements simultaneously. A replacement must be prepared before *pesantren* loses a leadership figure. Implementing a cadre system is a constructive initiative that can be implemented. The cadre necessitates dedication from stakeholders, including *Kyai*, educators, and alumni networks. This synergy and collaboration

serve as a mechanism for fostering human resource regeneration, which is crucial for upholding the values and quality of *pesantren*. This study thoroughly examines the *pesantren* regeneration model, which serves as an essential assurance for the continual sustainability of the *pesantren*. Paying attention to cadres demonstrates that a leader establishes a system for long-term sustainability rather than being a mere figurehead. The significance of cadres as the long-term orientation of the organization aligns with the research conducted by Zarkasyi et al. (2024), R. S. Malik (2018), Olsson et al. (2022), and Silvius (2017).

Values and Operational Standards of *Pesantren*'s Cadre

The pattern of human resource cadre development commences with a conceptual framework. Prior studies have demonstrated that the development of *pesantren* cadre formation is contingent upon the availability of resources and the operational dynamics of the management system. Conceptualization necessitates the acquisition of education and knowledge, the realization of ideas, and the cultivation of spiritual and physical well-being. In relation to these requirements, the concept will establish a task function to cultivate perceptive individuals who comprehend the significance of *pesantren* as an organization.

Figure 1 shows how the *pesantren* regeneration model is implemented systematically. The primary requirement for becoming a cadre is to understand *pesantren* values, which align with *pesantren*'s noble
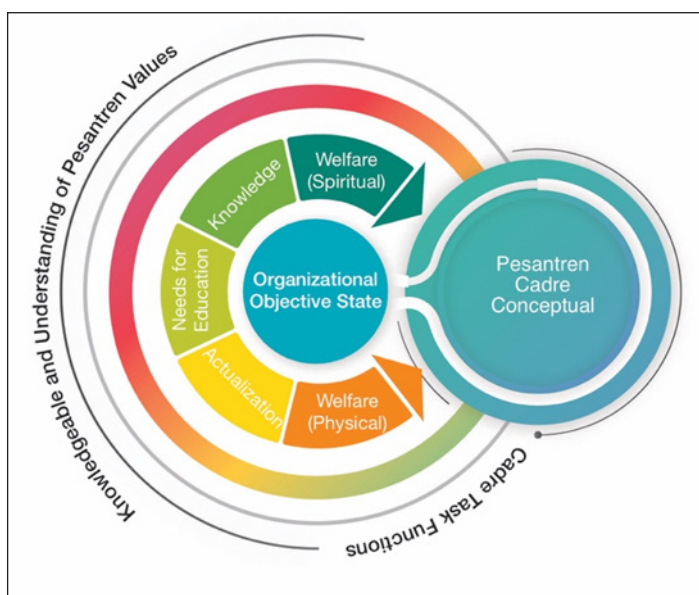
Figure 1. Pesantren's human resource cadre development system

ideals. The initiation of the regeneration program takes into account the objective conditions of *pesantren*, which are concerned with human resource management and development. The fulfillment of this orientation pays attention to a series of technical cadre factors, including the need for education, capacity in actualization science, and welfare. Implementing cadre duties and responsibilities will be consistent with *pesantren's* long-term program, ensuring sustainability. The efficacy of *pesantren*'s human resource cadre development is contingent upon the caliber of the cadres they possess. Consequently, *Pesantren* highly emphasizes grooming its graduates to become cadres.

Table 1 reveals the standards for *pesantren* cadres, including sincere spirit, character, broad insight, assessment of processes, knowledge, and understanding

of *pesantren* values. The interviews also revealed that several people were appointed to cadres and refused. Others have the motivation to become cadres, but it is not a priority. Even though the assessment of cadres is not sectoral but collective, the results are evaluative between the student care section, homeroom teachers, senior teachers, and *pesantren* leaders.

Eligibility criteria for cadre is determined by your performance as a *pesantren* student. Subsequently, the evaluation takes place after careful consideration and discussion among the leaders and teachers of *pesantren*, focusing on assessing the homeroom teachers' understanding of their students' character and mindset.

The cadre development system is carried out collectively and systematically. Collective because the cadre development program can run through the collaborative

Table 1

Standards for categorizing pesantren *cadres*

No	Open Coding	Categorization
1.	"A cadre is someone ready to live and die in a *pesantren*. This depiction reflects the responsibilities of a cadre. Being a cadre is not easy and requires high sincerity."	Having a Sincere soul
2.	"*Pesantren* cadres are chosen, not asked. "Those who appointed cadres are selected people with a good track record as students."	Having character
3.	"We appoint *pesantren* cadres based on the criteria of being superior in terms of academics, insightful, and adherence to disciplinary rules."	Broadminded
4.	"*Pesantren* does not randomly appoint cadres; the assessment of cadres is carried out while they are students. So, we understand their character."	Assessment of the process
5.	"We appoint *santri* as cadres to pursue higher education, so we choose those with academic excellence."	Knowledgeable
6.	"We are grateful that the alumni have a high opinion of *pesantren*. This calling is proof that they understand the values taught by *pesantren*."	Understand the value of *pesantren*
7.	"The cadres appointed are, of course, subject to the approval of the parents and the respective student. So, there is an understanding between the two parties, the family and the *pesantren*."	Having an agreement

roles of *pesantren* and *pesantren* leaders. Academic cadre development aims to cultivate self-improvement by acquiring either technical expertise or interpersonal abilities. This process of self-development also fosters the cultivation of critical thinking abilities to effectively realize the vision and mission of the *pesantren* organization. The operationalization of critical thinking involves molding the character of an individual who will undergo cadre formation to cultivate an aspirational, ethical, participatory, independent, and non-hegemonic personality.

The three *pesantren* employ a service process to develop academic and leadership cadres, whereby newly graduated students are appointed service teachers. Ar-Raudlatul Hasanah Pesantren selects the most outstanding graduates to serve as teachers voluntarily, without compulsion. *Darul Arafah* recruits and trains individuals as service delegates from other *pesantren* to become cadres. Meanwhile, Darul Amin establishes groups of individuals by utilizing community service educators in multiple *pesantren* institutions located in Southeast Aceh.

Figure 2 shows *pesantren*'s human resource cadre development system, which consists of input where the cadre selection process examines an individual's understanding of *pesantren* values. The process at this stage starts from cadre selection to cadre monitoring. The three *pesantren* have the same five souls because one genealogy consists of sincerity, simplicity, independence, and *ukhuwwah Islamiyah* (Islamic brotherhood). The manifestation of the five souls forms
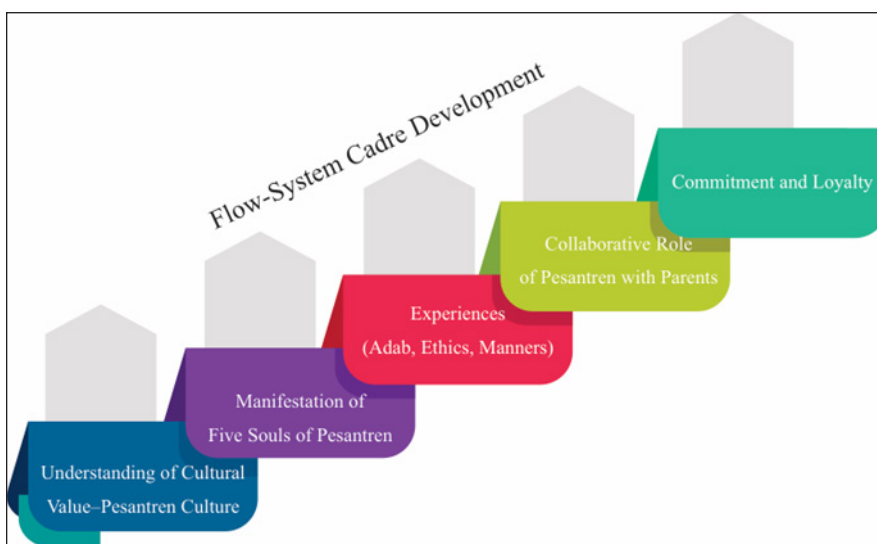
Figure 2. Flow-system of *pesantren's* human resource cadre development

an individual's character, which can be observed through ethics and manners while being a student. Apart from that, the appointment of cadres also considers academic aspects. The output aspect starts from understanding the cadre's values towards parents, thus forming a collaborative role. Understanding the *pesantren* human resource cadre development process creates long-term output through commitment and loyalty to the *pesantren*. Therefore, the primary emphasis of *pesantren* cadre development lies in the value dimension, resulting in the selection of alumni as cadres.

Leadership regeneration is an internal development that explores complex processes in the context of specific policies and cultural values. The principle of the cadre-regeneration system is an understanding of the culture and values of the organization. *Pesantren* needs to integrate the quality of education, physical development, regeneration, and community welfare into the vision and mission. This holistic approach will strengthen *pesantren's* positio*n* in facing the challenges of the times and meeting the expectations of the community.

Table 2 displays the requirements and implementation of *pesantren* cadre development. The management of Cadre development in *pesantren* involves systematically implementing managerial functions, including cadre planning, network establishment, cadre selection and implementation, cadre monitoring, and cadre evaluation. It enhances the quality of personnel by promoting leadership development and providing exemplary leadership models to subordinates. These include making decisions, generating innovative ideas, working with others, and demonstrating a strong dedication to enhancing the organization's quality.

Table 2
Requirements and operational stages for the intellectual improvement of pesantren *cadres*

Aspect of Cadre Development	Requirements of Cadre Development	Operationalization
Cadre Education	1. Is he/she a *pesantren* alumnus? 2. Have/has served at least a year in a *pesantren*. 3. Sign the letter of willingness to become a cadre. 4. Obtain parental approval.	1. *Pesantren* builds collaboration with external parties. 2. *Pesantren* carries out non-binding cooperation.
Cadre Leadership	1. Students are active in the *pesantren.* 2. Teachers are active in the *pesantren*.	

Management of Cadre Development Strategies in *Pesantren*

The needs and operationalization of *pesantren* cadre development. The management of *pesantren* cadre development technically accommodates managerial functionalization, starting with cadre planning, network building, cadre implementation/selection, monitoring, and evaluation. It carries out the improvement of cadre quality in terms of increasing leadership by providing exemplary leadership examples to subordinates. These include actions in decision-making, having creative ideas, collaborating with others, and having a high commitment to improving the organization's quality.

The Ar-Raudlatul Hasanah, Darul Arafah, and Darul Amin Pesantren develop an educational cadre through collaboration programs in the modern *pesantren* alum forum. Formal cadre formation includes scholarships for further study at either the undergraduate or master's level. The *pesantren* contributes to living costs, while external parties cover tuition costs. For example, several Darul Amin Pesantren cadres participate in the undergraduate-level program in collaboration with the Lazis As-Salam Institute. Meanwhile, the cadre formation pattern implemented by Darul Arafah and Raudhah sends its cadres to study in the Middle East, fulfilling students' living expenses during the study process. The Raudhah Pesantren also collaborates with Darussalam Gontor University in the education program for ulama cadres. Several cadres are also pursuing doctoral education through the Gontor Alumni Pesantren Forum (FPAG) collaboration program.

The second model of educational cadre development is non-formal education in the form of education and training. This type of educational cadre development is carried out internally and externally. This type of cadre education has a learning curriculum carried out programmatically and through disciplined implementation. Meanwhile, informal cadre formation can also involve participation in various activities in the community. Participation includes acting in charge, being part of a team, or just

participating. Anyone can join this type of cadre activity at any time. This can be used as an indicator of success in commitment and resilience as a cadre who has direct contact in everyday life.

Leadership styles vary among *pesantren*. Darul Amin advocates a participatory leadership style, Darul Arafat embodies democratic principles, and Raudhah exemplifies transformative leadership. The similarities among the three contribute to a charismatic leadership style. An examination of the deficiencies in applying these leadership styles, as evidenced in Darul Amin, highlights the benefits of participatory leadership, wherein the leader is informed of prevailing circumstances. In contrast, democratic leadership facilitates intervention by the Foundation board in decision-making processes. Another instance demonstrates that transformative leadership introduces innovative programs necessitating budgetary support.

According to Masqon (2011) and Mat Yusoff et al. (2024), academic cadre development is also carried out internally and is temporary through training and assessment. Academics apply a range of approaches and strategies to embed sustainability and provide four rationales for embedding sustainability in teacher education.

Model of Cadre Development through Network Development to Ensure *Pesantren*'s Sustainability

Pesantren faces figure-centrism; the death of a *pesantren* leader results in the collapse of the *pesantren*. Effective leadership is defined as an individual's ability to unite all his subordinates to achieve common goals by employing the strategies he believes are most effective in dealing with challenges. The *pesantren* leaders' network development process contributes to the leader's power. At this point, the leader is a well-known figure, so he draws the attention of the public or government to provide additional study opportunities for the students.

Internal organizational stakeholders must perform optimally to achieve organizational goals. The quality of education is inseparable from the community's role as a strategic partner of *pesantren*. Leaders can also join certain *pesantren* communities to see opportunities for collaboration in developing students. In this position, the Raudah Pesantren leader joined the FPAG, Sumatran alumni *pesantren,* and modern *pesantren*. As a result, several cadres were sent for further studies in master's and doctoral programs.

The research results show that the cadre development process involves several stages to obtain quality human resources. Cadre formation activities must be prepared and planned carefully, considering all factors that influence their implementation. To create a sustainable organizational system and gain the trust of the *pesantren* community, leaders must have the following qualifications: Provide bright ideas for innovation to the *pesantren* they lead. Through the cadre formation policy, leaders objectively state that *pesantren* provides equal opportunities for excellent teachers to be given academic scholarships.
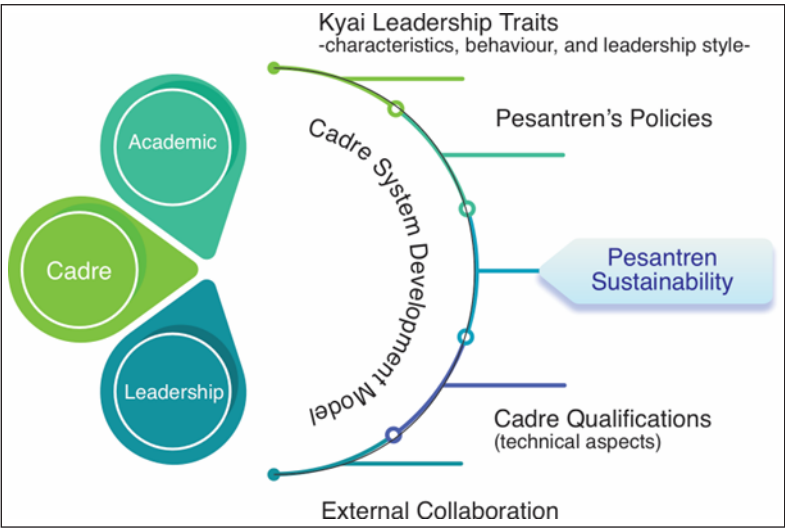
Figure 3. Leadership effectiveness in human resource cadre development

Second, *pesantren* leaders can show teachers how to increase their capacity and the quality of the *pesantren* education services they lead. Third, quality leadership requires continuity through cadre formation activities. This means that the leadership is constantly looking for opportunities for *pesantren* to be able to send their cadres for further studies.

Figure 3 shows that leaders (characteristics, behavior, and leadership style) influence the *pesantren* cadre development system. The characteristics of the *Kyai* that support the cadre formation policy are carried out through an assignment system. Meanwhile, the Kyai leadership styles identified through research results include the Ar-Raudlatul Hasanah Pesantren, which emphasizes participative leadership because cadres are appointed through deliberation. The appointment of leaders at Ar-Raudlatul Hasanah also considers technical aspects such as length of service,

seniority, educational background, academic qualifications, and work relationship networks.

The second case of leadership cadre development is at the Darul Amin Pesantren. It was carried out through an assignment model. This can be observed through the organizational structure created, where senior teachers are given an authoritative role in implementing the education system. Technically, senior teachers are divided into several coordinators who have decision-making authority. The coordinator is an extension of the leadership, such as the coordinator of care, teaching, *Dayah* business units, formal education schools, and extracurricular activities.

In the third case, the leader of the Darul Arafah Raya Pesantren is a member of the Foundation. However, the appointment considers aspects of suitability and competitiveness: competence and knowledge. An effective leader must be

able to change his leadership style based on his followers' characteristics and the situation at hand. The results of the study are supported by the research findings of Berglunc and Mulyani (Pauw et al., 2015; Srimulyani, 2013). Although some people are born with leadership qualities, they can be learned and developed by anyone with strong ambition and a leadership spirit. The research findings have important social implications for *pesantren* managers, as well as educational institutions in general, as they strive to improve educational quality through a cadre system.

Previous relevant studies on *pesantren's* cadre development have explored various dimensions, from the systemic and structural elements to leadership and globalization. For instance, studies from Wahyudani and Muhazir (2024) and Zarkasyi (2020) highlight the constructive implementation of cadre development within the *pesantren* management system. These studies shed light on the challenges the leaders face in cadre development, including *pesantren* culture, internal dynamics, and structure. Further, the research proposed that a *pesantren* cadre development model should be based on structural (policy initiatives and stakeholder collaboration) and systemic (the cultivation of *pesantren* cultural values for sustainability).

Meanwhile, Alam (2018), I. Gunawan et al. (2021) and Karim et al. (2023) prioritize the leadership dimension of cadre development. The experts argue that effective leadership is crucial in accommodating the challenges within the

designs of human resource empowerment models. Further, the findings reveal that leadership styles and practices in *pesantren* significantly influence the adaptability aspect and long-term viability of cadre development. These viewpoints underscore the significance of empowering leaders who can effectively manage internal and external pressures, thereby ensuring that their actions are consistent with the mission and values of *pesantren*. In a different approach, Kawakip (2020), Tolchah and Mu'ammar (2019), and Zarkasyi (2015) present a globalization perspective, emphasizing that cadre development serves as a tool for students to adapt to the challenges of a globalized world. These studies predominantly focus on how *pesantren* leaders and cadre development systems respond to global pressures while retaining *pesantren's* identity.

The discussion highlights the dual devotion of maintaining traditional values while adopting modernization. Therefore, a cadre development strategy should include structural, systemic, leadership, and globalization-responsive elements to deal with the complicated problems that *pesantren* faces, as shown by the variety of approaches.

The cadre formation system is crucial for the existence of *pesantren* and is long-term oriented. It involves a comprehensive review of the factors that make *pesantren* teachers suitable for becoming leaders. Effective *pesantren* cadre development ensures the stable operation of the education system without dependence on specific individuals. The implementation of *pesantren* education

requires the collaborative efforts of leaders, teachers, employees, and students. A cadre development model is dynamic because *pesantren* carries a unique concept. This means that *pesantren* is a miniature state in which three patterns of education (school-home-community) are implemented. Likewise, *pesantren* cadres must understand that a cadre who dedicates himself to the *pesantren* is also a form of devotion to his parents. Meanwhile, in terms of value, *pesantren* is a community-oriented educational institution. Therefore, a cadre is successful because he successfully implements values in the three domains of school, home, and community education.

The cadre development system in *pesantren* extends beyond technical training to establish a culture of sacrifice, sincerity, and loyalty among prospective cadres. These values are reinforced during their early years and are crucial in inspiring graduates to prioritize service to their *pesantren* more than pursuing higher education immediately. Thus, this system fosters a strong sense of belonging and dedication, ensuring the institution's sustainability. Practically, the regeneration process thrives under leaders with *pesantren* backgrounds. Their comprehensive knowledge of *pesantren's* educational and cultural institutions enables them to maintain continuity while responding to changing difficulties. Blending values and practical leadership highlight the cadre development model's dynamic nature. This dynamic model provides a framework for understanding how *pesantren* reconciles tradition and change, drawing interest from both *pesantren* and non-*pesantren* communities.

The cadre regeneration model practice in each *pesantren* is exceptionally distinct. This limitation may impact the consistency of the model developed, particularly in *pesantren*, which has unique typologies such as salaf and *tahfidz pesantren*. This is because the model's development must encompass a variety of methods and approaches. In addition, comprehension of the dynamics of regeneration in *pesantren* may be less comprehensive due to the absence of historical data or a broader socio-cultural context.

CONCLUSION

In the context of *pesantren* management, the cadre is divided into two categories: the regeneration of educational aspects and the regeneration of leadership. *Pesantren* has a strategic approach to cultivating and maintaining its resources for regeneration. The research findings on three prominent *pesantren* in Aceh and North Sumatra indicate that the regeneration process is systematically conducted in multiple stages. The selection process prioritizes candidates who deeply understand *pesantren*'s values, with ethical considerations taking priority over academic achievements. Additionally, loyalty and commitment are key criteria for selection. The monitoring process involves a collaborative effort between the *pesantren* and the guardians of the *santri* (students). Concurrently, the development of leadership within the three *pesantren* exhibits distinct attributes as a result of internal factors

such as standard operational procedure and the *pesantren* system, as well as external collaborations. Succession within the cadre system is intricately linked to external factors, including the attributes of leaders, their style of leadership, the characteristics of subordinates, and both internal and external environmental factors. Engaging in cadre formation activities is crucial to guarantee the ongoing succession of leadership. Hence, this research implies that engaging in informal cadre formation activities could potentially enhance the caliber of contingent leadership. The cadre-regeneration system is a long-term educational process that aims to optimize the potential of individuals as cadres or successors by transferring and cultivating certain values. This process is expected to produce strong and committed cadres. The importance of regeneration cannot be underestimated, as it is crucial to the sustainability of the organization in various contexts.

ACKNOWLEDGEMENT

REFERENCES

Aikens, K., McKenzie, M., & Vaughter, P. (2016). Environmental and sustainability education policy research: A systematic review of methodological and thematic trends. *Environmental Education Research*, *22*(3), 333-359. https://doi.org/10.10 80/13504622.2015.1135418

Alam, N. A. R. (2018). Strengthening leadership culture (The role of kyai in Indonesian Pesantren). *At-Ta'dib*, *13*(1), 1-17. https://doi.org/10.21111/at-tadib.v13i1.1986

Alwi, S., Iqbal, M., & Manas, N. H. N. (2023). Preventing bullying in Integrated Islamic Boarding Schools of Lhokseumawe City: A strategic management approach. *Idarah: Jurnal Pendidikan dan Kependidikan*, *7*(1), 17-34. https://doi.org/10.47766/idarah.v7i1.138

Azra, H. (2018). Islamic education in Indonesia. In H. Daun & R. Arjmand, (Eds.), *Handbook of Islamic Education. International Handbooks of Religion and Education* (Vol. 7, pp. 763-780). Springer. https://doi.org/10.1007/978-3-319-64683-1_32

Azro'i, I., & Fuaidi, I. (2020). The existence of pesantren: Implication study of pesantren leadership regeneration in Central Java. *Santri: Journal of Pesantren and Fiqh Sosial*, *1*(1), 1-12. https://doi.org/10.35878/santri.v1i1.203

Basori, R., Raharjo, T. J., Prihatin, T., & Yulianto, A. (2023). Maintaining Salafi values through innovative management practices at pesantren. *Jurnal Pendidikan Islam*, *9*(2), 145-156. https://doi.org/10.15575/jpi.v9i2.25376

Buang, S., & Chew, P. G.-L. (Eds.). (2014). *Muslim education in the 21st Century: Asian perspectives*. Routledge. https://doi.org/10.4324/9781315817873

Charmaz, K., & Thornberg, R. (2021). The pursuit of quality in grounded theory. *Qualitative Research in Psychology*, *18*(3), 305-327. https://doi.org/1 0.1080/14780887.2020.1780357

Erihadiana, M., & Jahari, J. (2018). Development model Islamic Education of basic and intermediate level pesantren based (Islamic Boarding School). *Proceedings of the International Conference on Islamic Education (ICIE 2018)*. https://doi.org/10.2991/icie-18.2018.48

Evans, N., Stevenson, R. B., Lasen, M., Ferreira, J.-A., & Davis, J. (2017). Approaches to embedding sustainability in teacher education: A synthesis of the literature. *Teaching and Teacher Education*, *63*, 405-417. https://doi.org/10.1016/j.tate.2017.01.013

Fadhli, M., Prasetyo, M. A. M., Siregar, M. F. Z., Pasaribu, M. H., & Sari, D. D. (2024). Perspective on improving school quality: The influence of teamwork and curriculum effectiveness in Islamic Schools. *Journal of Education and Learning, 18*(3), 858-867. https://doi.org/10.11591/edulearn.v18i3.21226

Fazlurrahman, H., Abqari, L. S., & Wardoyo, D. T. W. (2022). Pesantren (Islamic boarding schools): The largest form of social entrepreneurship in Indonesia. In V. Ratten (Ed.), *Driving Entrepreneurship in Southeast Asia* (pp. 54-61). Taylor and Francis. https://doi.org/10.4324/9781003260783-5

Gunawan, I., Kusumaningrum, D. E., & Sumarsono, R. B. (2021). Designs of human resource empowerment models in pesantren-based schools using soft system methodology approach: The Indonesian case. *Educational Sciences: Theory & Practice*, *21*(2), 44-66.

Gunawan, M. A., Anwar, K., Prasetyo, M. A. M., & Purwandari, E. (2023). Study of leadership style on employee performance (organizational motivation and commitment). *AIP Conference Proceeding, 2736*(1), Article 020002. https://doi.org/10.1063/5.0171021

Hapsari, M. I., Arifin, S. R., Herianingrum, S., Zaki, I., Mohd Thas Thaker, M. A., Duasa, J., Fathurrohman, M. S., & Roja Salma, J. (2024). Managing *waqf* land in Indonesia: ANP-driven strategies. *Pertanika Journal of Social Sciences and Humanities*, *32*(1), 325-343. https://doi.org/10.47836/pjssh.32.1.15

Karim, A., Bakhtiar, A., Sahrodi, J., & Chang, P. H. (2022). Spiritual leadership behaviors in religious workplace: The case of pesantren. *International Journal of Leadership in Education*. Advanced online publication. https://doi.org/10.1080/13603124.2022.2076285

Karim, A., Fathurrohman, O., Muhammadun, Saripudin, W., Rahmat, D., & Mansir, F. (2023). Altruistic works, religion, and corruption: Kiais' leadership to shape anti-corruption values in pesantren. *Cogent Social Sciences*, *9*(1), Article 2238968. https://doi.org/10.1080/23311886.2023.2238968

Kawakip, A. N. (2020). Globalization and Islamic educational challenges: Views from East Javanese Pesantren. *Ulumuna*, *24*(1), 105-131. https://doi.org/10.20414/ujis.v24i1.385

Khairani, M., Ali, H., & Rosadi, K. I. (2021). Analisis perumusan Undang-Undang Nomor 18 Tahun 2019 tentang Pesantren sebagai produk politik dan kebijakan Pendidikan Islam [An analysis of the formulation of Law number 18/2019 on Pesantren as a political product and Islamic Education policy]. *Jurnal Ilmu Manajemen Terapan*, *3*(1), 86-95. https://doi.org/10.31933/jimt.v3i1.705

Komariah, A., & Kurniady, D. A. (2017). Authentic leadership: Strategy of the implementation of madrasah management of change. *Jurnal Pendidikan Islam*, *6*(2), 293-310. https://doi.org/10.14421/jpi.2017.62.293-310

Lukens-Bull, R. (2019). Pesantren, madrasa and the future of Islamic Education in Indonesia. *Kawalu: Journal of Local Culture*, *6*(1), 29-58. https://doi.org/10.32678/kawalu.v6i1.2044

Ma`arif, M. A., Mumtahana, L., Sunarno, S., Mansyuri, A., & Nasith, A. (2023). Developing pesantren educator resources through optimizing the learning organization. *Nazhruna: Jurnal Pendidikan Islam*, *6*(3), 475-489. https://doi.org/10.31538/nzh.v6i3.4415

Malik, A. (2023). New variants of ultra-conservative Islamic schools in Indonesia: A study on Islamic

School endeavor with Islamic Group Movement. *Power and Education, 16*(1), 14-28. https://doi.org/10.1177/17577438231163042

Malik, R. S. (2018). Educational challenges in 21st century and sustainable development. *Journal of Sustainable Development Education and Research*, *2*(1), 9-20. https://doi.org/10.17509/jsder.v2i1.12266

Maslani, M., Hidayat, W., Qadir, A., & Muhyidin, A. (2023). Ecopedagogy in action: An ethnographic exploration of environmental preservation strategies in pesantren. *Jurnal Pendidikan Islam*, *9*(2), 211-222. https://doi.org/10.15575/jpi.v9i2.29347

Masqon, D. (2011). Dynamic of pondok pesantren as indegenous Islamic education centre in Indonesia. *TSAQAFAH*, *7*(1), 155-168. https://doi.org/10.21111/tsaqafah.v7i1.114

Mat Yusoff, S., Hai Leng, C., Abdul Razak, R., Basal, M. H., & Marzaini, A. F. M. (2024). Conceptions of assessment: Perceptions of physical and health education teachers in Selangor, Malaysia. *Pertanika Journal of Social Sciences and Humanities*, *32*(1), 189-216. https://doi.org/10.47836/pjssh.32.1.09

Muslim, A. B., Arroisi, J., Jan, J. M., & Ramazani, R. (2024). Indonesian pesantren - affiliated higher education: Universal Islamic values to develop locally engaged but globally oriented multilingual graduates. *Research in Post-Compulsory Education, 29*(1), 138-157. https://doi.org/10.1080/13596748.2023.2285633

Medias, F., Rahman, A. A., Susamto, A. A., & Pambuko, Z. B. (2022). A systematic literature review on the socio-economic roles of waqf: Evidence from organization of the Islamic Cooperation (OIC) countries. *Journal of Islamic Accounting and Business Research*, *13*(1), 177-193. https://doi.org/10.1108/JIABR-01-2021-0028

Morse, J. M., Stern, P. N., Corbin, J., Bowers, B., Charmaz, K., & Clarke, A. E. (2016). *Developing grounded theory: The second generation* (Vol. 3). Routledge.

Mustas, C. (2021). Information behavior of santri in the digital era: From literacy to multiliteracy. *Library Philosophy and Practice*, *2021*, 1-13.

Nilan, P. (2009). The 'spirit of education' in Indonesian pesantren. *British Journal of Sociology of Education*, *30*(2), 219-232. https://doi.org/10.1080/01425690802700321

Olsson, D., Gericke, N., & Boeve-de Pauw, J. (2022). The effectiveness of education for sustainable development revisited – a longitudinal study on secondary students' action competence for sustainability. *Environmental Education Research*, *28*(3), 405-429. https://doi.org/10.1080/13504622.2022.2033170

Pauw, J., Gericke, N., Olsson, D., & Berglund, T. (2015). The effectiveness of education for sustainable development. *Sustainability*, *7*(11), 15693-15717. https://doi.org/10.3390/su71115693

Prasetyo, M. A. M. (2022). Pesantren efektif: Studi gaya kepemimpinan partisipatif [Pesantren effectiveness: Participatory leadership style]. *Munaddhomah: Jurnal Manajemen Pendidikan Islam*, *3*(1), 1-12. https://doi.org/10.31538/munaddhomah.v3i1.159

Raihani, D. G., & Drysdale, L. (2013). Indonesia: Leading an Islamic school in a multicultural setting in Indonesia. In C. Day & D. Gurr (Eds.), *Leading schools successfully: Stories from the field* (pp. 184-193). Routledge. https://doi.org/10.4324/9780203740309

Sakai, M. (2014). Establishing social justice through financial inclusivity: Islamic propagation by Islamic savings and credit cooperatives in Indonesia. *TRaNS: Trans -Regional and -National Studies of Southeast Asia*, *2*(2), 201-222. https://doi.org/10.1017/trn.2014.4

Sakhiyya, Z., & Mulya, T. W. (2023). Introduction: Education in Indonesia—A critical introduction. In *Education in the Asia-Pacific Region: Issues, Concerns and Prospects* (Vol. 70, pp. 1-14). Springer. https://doi.org/10.1007/978-981-99-1878-2_1

Samsu, S., Kustati, M., Perrodin, D. D., Ritonga, M., Kosim, M., Rusmini, R., & Suwendi, S. (2021). Community empowerment in leading pesantren: A research of Nyai's leadership. *International Journal of Evaluation and Research in Education*, *10*(4), 1237-1244. https://doi.org/10.11591/ijere.v10i4.21833

Sanusi, A., Mighwar, M. Al, Wasliman, I., & Hanafiah, N. (2021). The leadership of K. H. Imam Zarkasyi in managing of Boarding School Darussalam Gontor. *International Journal of Educational Research, 4*(3), 14-25.

Sarwenda, Rahim, H., Rosyada, D., Zamhari, A., & Salim, A. (2024). Development of digital entrepreneurship programs in pesantren in Indonesia. In M. D. H. Rahiem (Ed.), *Religion, Education, Science and Technology towards a More Inclusive and Sustainable Future* (Issue 2021, pp. 273-278). Routledge. https://doi.org/10.1201/9781003322054-46

Silvius, G. (2017). Sustainability as a new school of thought in project management. *Journal of Cleaner Production*, *166*, 1479-1493. https://doi.org/10.1016/j.jclepro.2017.08.121

Songgirin, A. (2020). The urgency of cadre education system at Darunnajah Cipining Islamic Boarding School. *Al-Banjari: Jurnal Ilmiah Ilmu-Ilmu Keislaman*, *19*(2), 260-274. https://doi.org/10.18592/al-banjari.v19i2.3867

Srimulyani, E. (2013). Islamic schooling in Aceh: Change, reform, and local context. *Studia Islamika*, *20*(3), 467-487.

Subaidi, Tantowi, A., Cholid, N., Junaedi, M., Waluyo, & Nursikin, M. (2023). Eco-pesantren: Islamic education in forest conservation landscapes. *Fudan Journal of the Humanities and Social Sciences*, *16*(4), 541-567. https://doi.org/10.1007/s40647-023-00386-w

Susilawati, S., & Misbah, M. (2022). Islamic boarding school development: A review from management reshuffle. *Pedagonal: Jurnal Ilmiah Pendidikan*, *6*(1), 56-67. https://doi.org/10.55215/pedagonal.v6i1.4952

Tolchah, M., & Mu'ammar, M. A. (2019). Islamic education in the globalization era: Challenges, opportunities, and contribution of Islamic education in Indonesia. *Humanities & Social Sciences Reviews, 7*(4), 1031-1037. https://doi.org/10.18510/hssr.2019.74141

Wahyudani, Z., & Muhazir, M. (2024). Marriage Requirements for Cadres of Pondok Pesantren Gontor: Exploring the Concept of Kafa'ah. *Ulul Albab: Jurnal Studi Dan Penelitian Hukum Islam, 7*(1), 102-118. https://doi.org/10.30659/jua.v7i1.27460

Wargadinata, W., Wahidmurni, W., Abdussakir, A., Wahyuni, E. N., & Maimunah, I. (2019). Alternative education in the global era: Study of alternative models of Islamic Education in Tazkia International Islamic Boarding School Malang. *Library Philosophy and Practice, 2019,* 1-12.

Woodward, K. (2015). Indonesian schools: Shaping the future of Islam and democracy in a democratic Muslim country. *Journal of International Education and Leadership*, *5*(1), n1.

Zainal, S., Prasetyo, M. A. M., & Yaacob, C. M. A. (2022). Adopting pesantren-based junior high school programs: The pesantren change its educational system without conflict. *Jurnal Ilmiah Islam Futura*, *22*(2), 260-276. https://doi.org/10.22373/jiif.v22i2.13525

Zakariyah, Z. (2024). Improving madrasah competitiveness Through excellent Islamic education development strategies. *Nazhruna: Jurnal Pendidikan Islam*, *7*(1), 140-155. https://doi.org/10.31538/nzh.v7i1.4541

Zaki, I., Zusak, M. B. F., Mi'raj, D. A., & Hasib, F. F. (2022). Islamic community-based business cooperation and sustainable development goals: A case of pesantren community in Indonesia. *International Journal of Ethics and Systems*, *38*(4), 621-632. https://doi.org/10.1108/IJOES-12-2021-0218

Zarkasyi, H. F. (2015). Modern pondok pesantren: Maintaining tradition in modern system. *TSAQAFAH*, *11*(2), 223-248. https://doi.org/10.21111/tsaqafah.v11i2.267

Zarkasyi, H. F. (2020). Imam Zarkasyi's modernization of pesantren in Indonesia (A case study of Darussalam Gontor). *QIJIS: Qudus International Journal of Islamic Studies*, *8*(1), 161-200. https://doi.org/10.21043/qijis.v8i1.5760

Zarkasyi, H. F., Mas'ud, F., Hidayatullah, R. A., & Khakim, U. (2024). Strategy of Indonesian Pesantren University in achieving competence of student: A grounded research at UNIDA Gontor. *KnE Social Sciences, 9*(6), 119-138. https://doi.org/10.18502/kss.v9i6.15260

SOCIAL SCIENCES & HUMANITIES

Place Attachment Mediating Perceived Destination Competitiveness and Visitors' Intention in Ethnic Enclave Tourism Destination in Brickfields, Malaysia

Munieleswar Raju[1], Puvaneswaran Kunasekaran[2]*, Thanam Subramaniam[1,3,4] and Chia Kei Wei[1,3,4]

[1]*School of Hospitality, Tourism & Events, Taylor's University, 47500 Subang Jaya, Selangor, Malaysia*
[2]*Faculty of Human Ecology, Universiti Putra Malaysia, 43400 UPM Serdang, Selangor, Malaysia*
[3]*Sustainable Tourism Impact Lab, Taylor's University, 47500 Subang Jaya, Selangor, Malaysia*
[4]*Centre for Research and Innovation in Tourism (CRiT), Taylor's University, 47500 Subang Jaya, Selangor, Malaysia*

ABSTRACT

This study explored the factors influencing local tourists' intention to visit and explore an ethnic enclave. The research focused on Little India in Brickfields, a historic area known for its British colonial architecture with structures that have endured for over a century. The investigation examined the influence of perceived destination competitiveness and place attachment on tourist' intention to visit ethnic enclave-related tourism destinations. The study employed a positivist research philosophy and quantitative methods to collect data. A sample of 407 domestic tourists who visited Little India Brickfields was targeted for this study. The Cochran formula was applied to calculate the sample size due to the unavailability of information regarding the population. The study's outcomes indicated that perceived destination competitiveness is insignificant to travel intentions. Similarly, place attachment does not mediate between domestic tourists' perception of destination competitiveness and their visit intention. Specifically, this study contributes to the perceived destination competitiveness and attachment theory literature with the integration of ethnic enclave tourism nexus.

Keywords: Destination competitiveness, ethnic enclave, intention to visit, Little India, place attachment

INTRODUCTION

In the framework of a globalised capitalist economy, tourism is frequently seen as a secure asset that enables towns to display the exceptional characteristics that outline their characteristics and relevance (Amore, 2019; Zimmerman, 2008). Past studies on tourist development have emphasised its significance (Bunghez, 2016; Mulet-Forteza et al., 2021; Neilson, 2015). For instance, Malaysia offers various leisure and recreational activities, from adventure, sports, urban, rural, and cultural tourism, as well as entertainment and beach or island tourism (Eliot & Bickersteth, 2002; Mosbah & Saleh, 2014; Musa, 2012). Most studies have examined the effects of Tourism Malaysia over the last 20 years, particularly its contribution to the nation's growth (Shahbaz et al., 2020; Wan Mohd Zain, 2019). Malaysia is known for its diverse ethnic makeup and as an enclave tourism destination. An enclave designates an area where the activities—both commercial and residential—of a particular ethnic group are concentrated. These places offer migrant populations or ethnic minorities a sense of security and familiarity, which creates the feeling of being "at home" in a strange place (Khan, 2015).

Ethnic enclaves have emerged as popular visitor destinations, enriching the cultural identity of their regions via cultural and socio-economic influences (Sithas & Surangi, 2021; Song & Kim, 2022). Such enclaves are commonly labeled as "Little" or "Town" (Raju & Kunasekaran, 2022; Thirumaran, 2022). Notably, 'Little India' emerges as a notable cultural attraction, drawing tourists through its gastronomic offerings, traditional attire, decorative adornments, and immersive sensory environment (Henderson, 2003; Khan, 2015). Historically, Brickfields, a region in Kuala Lumpur often referred to as Little India, was established as a brick-manufacturing hub during the British colonial period. Jalan Tun Sambanthan Road, once known as Brickfields Road, is populated with shops selling a variety of Indian foods, snacks, sweets, clothes, ornaments, garlands, and other items typically used by Indian families.

In a city's development, public areas are especially important for increasing tourism and making the city livelier (Boivin & Tanguay, 2019; Kim, 2015). Despite "Little India" being an engrossing, alive and energetic film, its congested and small geographic space severely restricts the experience. This limited space causes traffic congestion and crowding, which irritates visitors (Khan, 2015). To attract tourists, tourist locations are increasingly promoting local cuisines and culinary events (Lai et al., 2018; Stone et al., 2018). Stone et al. (2018) emphasise that exceptional culinary and beverage experiences play a pivotal role in encouraging customer retention and repeat visits.

In the context of tourism, previous studies have explored the social dynamics within local people, particularly focusing on various ethnic enclaves across the region (Foo & Krishnapillai, 2018; Tan & Aminuddin, 2019). While the popularity of local food as a tourist attraction is growing, most studies have focused on

the positive effects of dining experiences, such as contentment and the intention to return, without fully exploring the mechanisms behind these effects. Few studies have examined the connection between memorable dining experiences and location attachment (Sthapit et al., 2020; Yang et al., 2024).

Some researchers have found that the majority of previous research on ethnic enclave destinations has focused on socioeconomics, local community engagement, and stakeholder perspectives (Raju & Kunasekaran, 2022; Woosnam et al., 2020); very few studies have examined the Indian ethnic enclave. In addition, place attachment has the potential to mediate and reflect various visitor or tourist sentiments towards tourist destinations. The findings of Chan et al. (2020) emphasised a notable influence on pro-environmental actions, while some studies have demonstrated the important mediating role of place attachment in influencing future visit intentions (Isa et al., 2020; Nursyamsiah & Setiawan, 2023). Hence, the mediating role of place attachment in enclave tourism remains a relatively unexplored area. As such, this research investigates the mediating effect of place attachment on the relationship between perceived destination competitiveness and tourists' intentions in the context of ethnic enclaves.

Literature Review

Ethnic Enclave Tourism

Ethnic tourism has become a vital aspect of daily life and has moved beyond the boundaries of minority communities (Park et al., 2020). This trend is somewhat apparent in areas inhabited by ethnic minorities, where the cultural traditions and lifestyles of the local population play a significant role in attracting tourists (Ma et al., 2021). Ethnic enclave sites have become among some of the most popular travel destinations globally in recent years (Kim, 2018; Rath et al., 2018). Visitors are drawn to these locations in search of intangible cultural heritage strongly linked to particular ethnic communities (George, 2010). The value of ethnic enclave destinations lies in their ability to offer a reliable and sustainable source of tourism revenue throughout the year (Lin, 2013).

Ethnic tourism has evolved, moving beyond the confines of minority communities to become a significant aspect of daily life (Park et al., 2020; Yang & Wall, 2016). This trend is particularly evident in areas with ethnic minorities, where the local culture and way of life attract tourists (Grogan et al., 2020; Su et al., 2016). Ethnic enclaves are now among the most popular tourist attractions worldwide (Kim, 2018; Rath et al., 2018). These locations attract tourists seeking to experience the intangible cultural heritage associated with ethnic communities (George, 2010). Enclave tourism destinations are important resources that offer a reliable, sustainable, and consistent income stream for local economies throughout the year (Lin, 2013). These sites allow domestic communities to engage visitors in various approaches, depending on the activities they offer (Saarinen & Wall-Reinius, 2019). By fostering mutual understanding,

these exchanges help tourists and ethnic communities better comprehend one another's customs and lifestyles. Building on this, Woosnam et al. (2019) developed the idea of "Ethnic Neighbourhood Tourism," which emphasises the commercialisation of distinctive ethnic cultures present in certain neighbourhoods and provides experiences that are difficult to find in other parts of the city or country.

Enclave tourism not only creates more employment options for minority people, but it also emphasises the importance of their active participation in the creation and growth of the tourism industry. Therefore, rather than focusing solely on economic growth, tourism planners in ethnic enclaves should prioritise fostering intercultural understanding and awareness, while educating minority groups about the significance of their cultural heritage (Hardy et al., 2002). Cultural interactions allow visitors to engage with ethnic communities, which benefits the local economy (Zhuang et al., 2017). Participation in tourism activities helps local populations gain a better understanding of one another's traditions and ways of life, which benefits both travellers and the growth of tourist destinations. In a particular ethnic place, this may lead to exchanges amongst tourists seeking genuine ethnic culture (Yang, 2018). As the tourism industry expands, travellers can establish authentic ties with ethnic groups, which contributes to boosting the nation's economy (Zhuang et al., 2017).

Additionally, ethnic groups should actively participate actively in planning and decision-making to address the demand for tourism products (Abascal et al., 2016). This underscores that research on enclave tourism is still in its early stages and highlights the demand for further studies in this area.

Integrated Model (IM) of Destination Competitiveness

In the tourism sector, destination competitiveness is a complex concept that encompasses several elements that affect a destination's overall appeal, including activities, services, infrastructure, and attractions (Mitiku, 2018; Nasr, 2017). It describes a place's capacity to draw more tourists and boost tourism expenditures while offering fulfilling and pleasurable experiences (Croes et al., 2020; Teixeira et al., 2019). There are several key models of competitiveness, which typically include five different frameworks and recognise the interdependence of the elements affecting a destination's attractiveness. These models acknowledge that competitiveness is a multifaceted phenomenon shaped by a combination of objective and subjective factors. The present research focuses on the factors connecting destination competitiveness with visit intentions to ethnic enclave destinations and introduces the Integrated Model (IM) of competitiveness (Nadalipour et al., 2019). In the Integrated Model, the aspects of destinations that attract and motivate tourists to visit are referred to as resources or core resources.

In the Integrated Model, the features of a destination that attract tourists and encourage visits are identified as resources or core resources. These resources can be grouped into three categories: Endowed

(Inherited), Created, and Supporting (Armenski et al., 2018; Crouch, 2011; Fernández et al., 2020). Endowed resources include cultural or heritage assets such as food, crafts, rituals, language, architectural monuments, and customs. Created resources encompass accommodation, dining options, activities, tours, and shopping. Supporting resources enhance the tourism experience by adding value through aspects such as local hospitality, telecommunications, local government practices, ease of access to the destination, and positive interactions with the local population (Crouch, 2011; Fernández et al., 2020).

Place Attachment

Place attachment refers to the emotional, cognitive, and functional bonds that individuals form with specific places (Lewicka, 2011). Attachment theory has advanced over the decades to become a firmly-established scientific concept. The concept of place attachment has been widely studied, with its development traced back to the late 1950s. Despite variations in definitions, scholars generally agree that place attachment is a construct with multiple dimensions, consisting of social connection, place affect, place identity, and place dependence (Scannell & Gifford, 2010; Hinds & Sparks, 2008; Halpenny, 2010; Prayag & Ryan, 2012; Ramkissoon, 2016). Evidence indicates that place attachment significantly influences behaviour, demonstrating a person's inclination to defend significant and profound places, even when other tourism sites hold similar importance (Loureiro, 2014; Peroff et al.,

2020). Earlier research has emphasised the mediating effect of place attachment in the relationship between destination loyalty and visitor enjoyment (Song et al., 2017). Place attachment has been shown to have a favourable and significant effect on visitors' sentiments, happiness, responsible behaviour, word-of-mouth recommendations, and revisit intention (Chen et al., 2018; Tsai, 2016). Chen and Dwyer (2017) demonstrated a direct positive correlation between site attachment and ambassador behaviour. In contrast, negative relationships were observed between visitors' place happiness and social bonding, and between their overall contentment and place attachment (Chen & Phou, 2013; Ramkissoon & Mavondo, 2017).

Theories

The study's fundamental underpinnings were Attachment Theory, Theory of Planned Behaviour (TPB), and the Integrated Model (IM) of Destination Competitiveness. Extending the Theory of Reasoned Action, the TPB forecasts behaviour by considering a person's abilities, dispositions, assets, and individual standards (Mahardika et al., 2019; Utami, 2017). As the TPB states, an individual's behaviour or actions are determined by their attitudes and perceptions, subjective social standards, and perceived control over their actions (Chen & Tung, 2014; Japutra et al., 2019). The theory establishes the foundation for investigating the dependent variable concerning travelers' intentions to explore ethnic enclave destinations. Similarly, place

attachment is grounded in attachment theory, which derives from naturalistic observations of the interactions between infants and their mothers. Attachment theory describes the connection behaviours of children that promote a sense of attachment and elicit caregiving responses in adults. Moving beyond the behaviourist perspective, Bowlby (1974) argued that subjective emotional experiences drive attachment behaviours. In tourism, attachment theory explores the relationship between people and places. The integration of attachment theory with place theory contributes to the growth and development of environmental understanding.

The emotional connection that people have to their environment varies depending on their level of attachment. In this study, "place attachment" serves as a mediator to describe individuals' feelings toward favourable, unfavourable, or unclear locations in human-place interactions. The Integrated Model (IM) of Destination Competitiveness, which includes the fundamental elements of perceived destination competitiveness—(i) resources, (ii) destination management, (iii) demand conditions, and (iv) situational variables— reflects the overall competitiveness of a destination. Tourism scholars generally acknowledge that the perception of a location is important, not only in determining the choice of destination but also in influencing customers' general purchasing and travel habits.

Research Framework

Using theoretical frameworks, this study examines how destination competitiveness affects travellers' intentions in ethnically isolated destinations. This research centered on Little India in Brickfields, a well-known ethnic enclave in Malaysia. The study underscores key determinants of perceived destination competitiveness, concentrating on the resource factors that enable the delivery of tourism-related goods and services. Hence, the research framework for this study is illustrated in Figure 1.
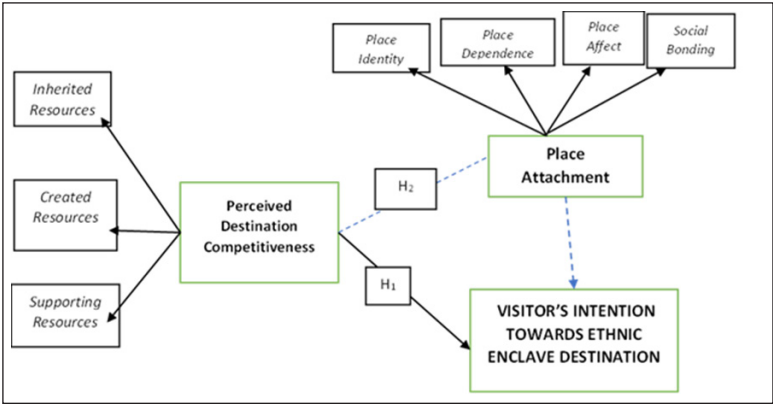
Figure 1. Research framework

Source: Authors' work

This study utilised a modified version of Dwyer and Kim's (2003) research paradigm, which is frequently used by researchers in destination-related studies. In this framework, place attachment serves as the mediator, with perceived destination competitiveness as the independent variable and visitors' intentions to visit ethnic enclave destinations as the dependent variable.

The study's hypotheses are as follows:

H_1: Perceived destination competitiveness positively influences visitors' intentions towards ethnic enclave destinations.

H_2: Place attachment mediates the relationship between perceived destination competitiveness and visitors' intentions.

MATERIALS AND METHODS

This study adopted a deductive approach and a positivist research philosophy, focusing on testing hypotheses, validating models and methodologies, quantifying variables, and extrapolating results from a sample that represents the whole population (Majeed, 2019; Mohajan, 2018; Park et al., 2020).

The research was carried out in Little India, where data was collected to test the proposed theoretical framework. Surveys are commonly acknowledged as a dependable and efficient instrument for gathering firsthand data. Due to the absence of evidence indicating that tourists to Kuala Lumpur specifically visit Little India, the target demographic for the study remained undefined. Thus, the Cochran Formula (1977) was used to establish the required sample size, which yielded a need for 385 respondents. Both online surveys and direct distribution methods were employed to collect data.

Given the social distancing measures and government-imposed to limit movement and prevent the spread of disease, an online survey was deemed crucial for data collection. To reach possible respondents, social media platforms such as Facebook, Instagram, Twitter, and Telegram were utilised. Participants were given access to the survey link through Google Forms and Microsoft Forms for members of pertinent social media groups. Once local authorities lifted MCO restrictions, the researcher employed a direct distribution strategy to complete data collection. After thoroughly explaining the study's objectives to the potential respondents, the researcher visited Little India Brickfields and distributed questionnaires directly. After considering the possibility of receiving incomplete surveys, the researcher initially distributed 450 survey questionnaires among the target respondents. Of the 457 distributed, 411 were returned fully completed. Descriptive analysis was performed on 407 completed samples using SPSS, followed by Structural Equation Modelling (SEM) analysis with SmartPLS version 3. PLS-SEM was deemed suitable as it examines and validates theories for non-parametric data distributions. This approach included both measurement model and structural model analyses.

RESULTS AND DISCUSSION

Table 1 provides an overview of the demographic characteristics of the 407

participants. Females constitute the majority of participants (62.2%). The largest age group was 30 to 39 years old (52.6%), and most participants were married (64.4%). In terms of educational qualifications, the majority of respondents held a degree (34.4%), and most were employed in the private sector (40.5%). As for monthly income, 42.8% of respondents reported earning over RM5,001.

Assessments of Measurement Model (Reflective)

Assessing the reflective measurement model begins with examining the indicator loadings. This step is crucial to ensure adequate item reliability and verify that over 50% of the indicator's variance is explained. For a reflective model, indicator loadings should typically be greater than 0.70 (Hair et al., 2018). Both indicator loadings, prior to and following item removals, were included in the analysis. One item (CR1) was removed due to its loading being less than 0.5. Since the cross-loading for CR1 was 0.675, this modification was done to guarantee that the Average Variance Extracted (AVE) for the produced resources variable was greater than 0.5. This was followed by a test of discriminant validity. Discriminant validity aids in evaluating the empirical differences between a construct and other structural model components (Hair et al., 2018). Fornell and Larcker (1981) contend that the outer indicator's loading on its assigned construct should be higher than all of its cross-loadings on other constructs in the model. Discriminant validity is attained, and the study meets the

Table 1
Overview of demographic characteristics

Demographics	Frequencies (n)	Percentage (%)
Gender		
Male	154	58.1
Female	253	41.9
Age		
19 and below	18	4.4
20–29	62	15.2
30–39	214	52.6
40–49	61	15.0
50–59	38	9.3
60 and above	14	3.4
Marital Status		
Single	143	52.7
Married	262	21.4
Divorced	2	1.6
Education Level		
Secondary	45	11.1
Diploma/ A-Level	87	21.4
Bachelor's Degree	140	34.4
Master	101	24.8
PhD	34	8.4
Monthly Income		
RM1000 below	19	4.7
RM1001–2000	33	8.1
RM2001–3000	55	13.5
RM3001–4000	65	16.0
RM 4001–5000	55	13.5
Above RM 5001	180	44.2

Table 2
Fornell- Lacker criterion analysis

	BI	PA	PDC
Behavioural Intention (BI)	**1.000**		
Place Attachment	0.902	**1.000**	
Destination Competitiveness (PDC)	0.670	0.681	1.000

Fornell and Larcker criteria, given that all indicators' loading values are higher than their cross-loadings with other constructs (Table 2).

Assessing the Structural Model

The structural model was analysed after evaluating the measurement model. Hypothesis testing included evaluations of blindfolding and predictive relevance (Q^2), effect sizes (f^2), the coefficient of determination (R^2), and structural model path coefficients.

Assessing Coefficient of Determination (R^2)

The R^2 value is a parameter that quantifies in-sample predictive performance, with values falling within the range of 0 to 1. Hair et al. (2018, 2011) and Henseler et al. (2009) state that an R^2 value of 0.75 is classified as strong, 0.50 is moderate, and 0.25 is weak. As presented in Table 3, the R^2 value for behavioural intention is 0.826, meaning that place attachment explains 82.6% of the variance in travellers' visit intentions. In addition, 75.6% of the variance in place attachment is attributed to behavioural intention. These results indicate strong R^2 values for both place attachment and behavioural intention.

Table 3
Coefficient of determination

Constructs	R^2
Behavioural Intention	0.826
Place Attachment	0.756

Effect Size (f^2)

The following phase involves assessing the effect size. The f^2 value evaluates how the exclusion of specific predictor constructs influences the R^2 value of the endogenous construct (Hair et al., 2018). When evaluating f^2 effect sizes, the conventional thresholds are used, where values of 0.02, 0.15, and 0.35 correspond to small, medium, and large effect sizes, respectively (Hair et al., 2014). Table 4 presents the results for both the coefficient of determination and effect size. The research findings suggest that destination competitiveness significantly impacts both behavioural intention and place attachment. Additionally, place attachment exerts a small effect on behavioural intention.

Examining Blindfolding and Predictive Relevance (Q^2)

Once the R^2 value and f^2 effect size have been examined, the Q^2 value is subsequently evaluated. The Q^2 value indicates the predictive relevance of the model, making it easier to predict the effect of the exogenous factor and individual item factors. Q^2 values greater than 0 are regarded as minor, 0.25 as medium, and 0.5 as significant in terms of the PLS path model prediction (Hair et al., 2018). Table 5 displays the findings

Table 4
Coefficient of determination (R^2) and effect size (f^2) analysis

Exogenous	Endogenous	R^2	Effect Size (f^2)	Effect Size Rating
Place Attachment	Behavioural Intention	0.756	0.000	Small effect
Destination Competitiveness	Behavioural Intention		0.352	Large effect
Destination Competitiveness	Place Attachment		0.632	Large effect

from the predictive relevance analysis. The Q^2 values in this study are greater than zero, and place attachment significantly influences behavioural intention with a Q^2 value of 0.816.

Table 5
Predictive relevance analysis

Exogenous Constructs	Q^2 value
Place Attachment-> Behavioural Intention	0.816

Direct Relationship between Exogenous and Endogenous Analyses

Perceived destination competitiveness is the sole exogenous construct in this study. Bootstrapping was used to test the hypothesis, and Table 6 displays the findings. The findings indicate that perceived destination competitiveness does not have a direct significant effect on behavioural intention. Based on the statistical outcomes (path coefficient = 0.040; t-value = 1.000), H_1 was rejected, as these values fell substantially short of meeting the minimum significance threshold of 1.96. H_2 was also rejected, as place attachment does not influence the association between behavioural intention and destination competitiveness.

Discussion

This research investigated the relationship between tourism competitiveness, place attachment, and visitors' behavioural intentions at an ethnic enclave destination in Malaysia. The findings show no significant correlation between behavioural intention and perceived destination competitiveness (t-value = 1.000). Our findings contradict previous research by Albayrak et al. (2016), Novais et al. (2018), and Zainuddin et al. (2016), which established strong links between behavioural intention and destination competitiveness. Nevertheless, the findings revealed that the combination of endowed resources (such as language, customs, belief systems, natural, cultural, and heritage elements, as well as special events, entertainment, accommodations, various tourism activities, restaurants, shopping, organised tours and transportation) and created resources (including lodging, telecommunications, local hospitality, local authorities' behaviour, destination accessibility, and relationships with locals) at Little India Brickfields may not have met visitors' expectations. This discrepancy could be attributed to the fact that, especially

Table 6
Hypotheses testing

Hypotheses	Relationship (Exogenous -> Endogenous)	Path Coefficients (β)	t- values	P value*	Decision
H_1	Destination Competitiveness-> Behavioural Intention	0.040	1.000	0.318	Rejected
H_2	Destination Competitiveness -> Place Attachment-> Behavioural Intention	0.016	0.522	0.602	Rejected

*P significant at p < 0.05

during the pandemic (when the study was conducted), the enclave's tourism offerings did not align with the experiences visitors anticipated.

During the outbreak, several restrictions were imposed that limited entry and hindered service providers from delivering the promised tourism experiences. Furthermore, the characteristics of the destination could also play a role in this outcome. When choosing to visit Brickfields, guests may not prioritise the availability of developed, endowed, and supporting resources, as Little India is largely known as a centre for trade and business. Our analysis revealed that the relationship between perceived destination competitiveness, place attachment, and behavioural intention was not statistically significant (t-value = 0.52). This conclusion differs substantially with the work of Nasir and Ghani (2021), Qian and Xue (2024), and Song et al. (2017), whose research established the mediating effect of place attachment in relating destination competitiveness with tourists' behavioural intentions. These findings are consistent with the research of Prayag & Ryan (2012), which proposed that emotional attachment to tourist destinations can be diminished when there is an inadequate provision of leisure and cultural facilities. Therefore, place attachment does not act as a mediator between destination competitiveness and behavioural intention in Brickfields, as the area is primarily focused on the trading of Indian cultural-related items.

The reduced accessibility during the pandemic significantly affected tourists'

behaviour and their perceptions of enclave tourism destinations. Travel restrictions and the reduced availability of services have likely led to poorer experience for visitors, potentially resulting in dissatisfaction and negative perceptions of the location. Due to economic uncertainty, tourists became more selective and opted for more affordable destinations, which weakened emotional attachments and limited social and cultural activities.

CONCLUSION AND IMPLICATIONS

This research calls for a comprehensive re-assessment of the elements that determine a destination's competitiveness, specifically focusing on ethnic enclaves. It urges stakeholders to rethink the contribution of various resources in attracting tourists. The findings indicate that visitors' perceptions of a destination's competitiveness have little influence on their behaviour, highlighting the need for marketing approaches that showcase experiential cultural offerings and distinctive commercial activities instead. Although place attachment did not serve as a mediator, developing stronger connections through community participation and cultural festivities could potentially foster greater visitor retention and loyalty over time. By doing so, the findings contribute to the understanding of tourism behaviour, offering a comparison with previous studies. When developing tourism strategies, policymakers are encouraged to consider the unique characteristics of ethnic enclaves, placing an emphasis on community involvement,

cultural preservation, and infrastructure in fostering sustainable development. Policymakers and interested parties could implement support mechanisms, including resource provision, skills development programmes, and monetary assistance, to help businesses within Little India adapt to evolving market dynamics. By incorporating more recreational activities and immersive cultural offerings into the visitor experience, this ethnic neighborhood could enhance its competitive position while creating more welcoming environments for tourists.

Limitations and Recommendations for Future Research

Several limitations of this research could be noted. Firstly, the sample may not fully represent all visitor perspectives as it only comprised 407 domestic tourists, excluding foreign visitors. The focus was on destination competitiveness and place attachment, without considering other potentially important factors. The pandemic likely impacted the results, which might have been different under normal circumstances. Additionally, the results may not be fully representative due to the selective nature of the sample and the absence of statistical data from Kuala Lumpur City Hall or the Malaysian Department of Statistics.

Future studies should examine the relationship between place attachment and destination competitiveness in other "Little India" regions of Malaysia, including Klang, Malacca, Penang, Johor, and Ipoh, while considering destination image as an additional factor influencing travellers' intentions. Future research would also benefit from employing qualitative or mixed-methods research designs to explore how place attachment might function as a moderating variable, which was not examined in this study. Additionally, extending the research scope to incorporate international visitors would enhance the generalisability of the findings across different cultural contexts and visitor profiles. These variables may reveal interesting connections if explored in other ethnic enclaves, such as Kuala Lumpur's Chinatown. Incorporating sustainability considerations could also provide insights into how social and economic factors influence travellers' attitudes and intentions.

ACKNOWLEDGEMENTS

REFERENCES

Abascal, T. E., Fluker, M., & Jiang, M. (2016). Domestic demand for Indigenous tourism in Australia:

Understanding intention to participate. *Journal of Sustainable Tourism*, *24*(8-9), 1350-1368.

Albayrak, T., Caber, M., & Çömen, N. (2016). Tourist shopping: The relationships among shopping attributes, shopping value, and behavioral intention. *Tourism Management Perspectives*, *18*, 98-106. https://doi.org/10.1016/j.tmp.2016.01.007

Amore, A. (2019). *Tourism and urban regeneration: Processes compressed in time and space*. Routledge. https://doi.org/10.4324/9780429460159

Armenski, T., Dwyer, L., & Pavluković, V. (2018). Destination competitiveness: Public and private sector tourism management in Serbia. *Journal of Travel Research*, *57*(3), 384-398. https://doi.org/10.1177/0047287517692445

Boivin, M., & Tanguay, G. A. (2019). Analysis of the determinants of urban tourism attractiveness: The case of Québec City and Bordeaux. *Journal of Destination Marketing & Management, 11*, 67-79. https://doi.org/10.1016/j.jdmm.2018.11.002

Bowlby, J. (1974). *Attachment and loss. (Vol. 1, 3rd ed.)*. The Hogarth Press.

Bunghez, C. L. (2016). The importance of tourism to a destination's economy. *Journal of Eastern Europe Research in Business & Economics, 2016*, 1-9. https://doi.org/10.5171/2016.143495

Chan, S., Utami, S. & Aprilia, C. (2020). The role of place attachment as a mediator in the effect of destination attractiveness on environmentally responsible behavior in national tourism parks. *Proceedings of Annual International Conference (AIC) on Social Science, 10*, 24-31.

Chen, N. C., Dwyer, L., & F. D. (2018). Resident' place attachment and word-of-mouth behaviours: A tale of two cities. *Journal of Hospitality, and Tourism Management, 36,* 1-11. https://doi.org/10.1016/j.jhtm.2018.05.001

Chen, N. C., & Dwyer, L. (2017). Resident's place satisfaction and place attachment on destinations brand-building behaviors: Conceptual and empirical differentiation. *Journal of Travel Research, 57*(8), 1026-1041.

Chen, C. F., & Phou, S. (2013). A closer look at destination: Image, personality, relationship and loyalty. *Tourism Management*, *36*(June), 269-78. https://doi.org/10.1016/j.tourman.2012.11.015

Chen, M. F., & Tung, P. J. (2014). Developing an extended theory of planned behavior model to predict consumers' intention to visit green hotels. *International Journal of Hospitality Management*, *36*, 221-23

Cochran, W. G. (1977). *Sampling techniques (3rd ed.)*. John Wiley & Sons

Croes, R., Ridderstaat, J., & Shapoval, V. (2020). Extending tourism competitiveness to human development. *Annals of Tourism Research*, *80*, 102825. https://doi.org/10.1016/j.annals.2019.102825

Crouch, G. I. (2011). Destination competitiveness: An analysis of determinant attributes. *Journal of Travel Research*, *50*(1), 27-45. https://doi.org/10.1177/0047287510362776

Dwyer, L., & Kim, C. (2003). Destination competitiveness: determinants and indicators. *Current Issues in Tourism*, *6*(5), 369-414. https://doi.org/10.1080/13683500308667962

Eliot, J., & Bickersteth, J. (2002). *Malaysia handbook: The travel guide*. Footprint Travel Guides.

Fernández, J. A. S., Azevedo, P. S., Martín, J. M. M., & Martín, J. A. R. (2020). Determinants of tourism destination competitiveness in the countries most visited by international tourists: Proposal of a synthetic index. *Tourism Management Perspectives*, *33*, 100582. https://doi.org/10.1016/j.tmp.2019.100582

Foo, R., & Krishnapillai, G. (2018). Preserving the intangible living heritage in the George Town world heritage site, Malaysia. *Journal of Heritage Tourism, 14*(4), 358-370. https://doi.org/10.1080/1743873X.2018.1549054

Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. *Journal of Marketing Research, 18*(4), 382-388. https://doi.org/10.2307/3151335

George, E. W. (2010). Intangible cultural heritage, ownership, copyrights, and tourism. *International Journal of Culture, Tourism and Hospitality Research*, *4*(4), 376-388. https://doi.org/10.1108/17506181011081541

Grogan, D., Mercer, C., & Engwicht, D. (2020). *Cultural planning handbook: An essential*

Australian guide. Routledge. https://doi.org/10.4324/9781003136668

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing*

Theory and Practice, 19(2), 139-152. https://doi.org/10.2753/MTP1069-6679190202

Hair, J. F., Sarstedt, M., Ringle, C. M., & Gudergan, S. P. (2018). *Advanced issues in Partial Least*

Squares Structural Equation Modeling. SAGE Publications

Hair, J. F., Sarstedt, M., Hopkins, L., & Kuppelwieser, V. G. (2014). Partial Least Squares Structural

Equation Modeling (PLS-SEM): An emerging tool in business research. *European Business Review, 26*(2), 106-121.

Halpenny, E. A. (2010). Pro-environmental behaviours and park visitors: The effect of place attachment. *Journal of Environmental Psychology*, *30*(4), 409-421. https://doi.org/10.1016/j.jenvp.2010.04.006

Hardy, A., Beeton, R. J., & Pearson, L. (2002). Sustainable tourism: An overview of the concept and its position in relation to conceptualisations of tourism. *Journal of Sustainable Tourism*, *10*(6), 475-496. https://doi.org/10.1080/09669580208667183

Henderson, J. (2003). Ethnic heritage as a tourist attraction: The Peranakans of Singapore. *International Journal of Heritage Studies*, *9*(1), 27-44. https://doi.org/10.1080/1352725022000056613

Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The use of partial least squares path modeling in international marketing. *Advances in International Marketing, 20*, 277-320. https://doi.org/10.1108/S1474-7979(2009)0000020014

Hinds, J., & Sparks, P. (2008). Engaging with the natural environment: The role of

affective connection and identity. *Journal of Environmental Psychology*, *28*(2), 109-120. https://doi.org/10.1016/j.jenvp.2007.11.001

Isa, S. M., Ariyanto, H. H., & Kiumarsi, S. (2020). The effect of place attachment on visitors' revisit intentions: Evidence from Batam. *Tourism Geographies*, *22*(1), 51-82. https://doi.org/10.1080/14616688.2019.1618902

Japutra, A., Loureiro, S. M. C., Molinillo, S., & Ekinci, Y. (2019). Travellers' mindsets and theory of planned behaviour. *Tourism Management Perspectives, 30,* 193-196. https://doi.org/10.1016/j.tmp.2019.02.011

Khan, S. (2015). Otherness" of ethnic enclave attractions in multicultural cities: A study of Chinatown and Little India. *Asia-Pacific Journal of Innovation in Hospitality and Tourism, 4*(1), 63-76. https://doi.org/10.7603/s40930-015-0004-8

Kim, A. M. (2015). *Sidewalk city. In Sidewalk City.* University of Chicago Press. https://doi.org/10.7208/chicago/9780226119366.001.0001

Kim, J. (2018). Manhattan's Koreatown as a transclave: The emergence of a new ethnic enclave in a global city. *City & Community*, *17*(1), 276-295. https://doi.org/10.1111/cico.12276

Lai, M. Y., Khoo-Lattimore, C., & Wang, Y. (2018). A perception gap investigation into food and cuisine image attributes for destination branding from the host perspective: The case of Australia. *Tourism Management, 69*, 579-595. https://doi.org/10.1016/j.tourman.2018.06.033

Lewicka, M. (2011). Place attachment: How far have we come in the last 40 years? *Journal of Environmental Psychology*, *31*(3), 207-230. https://doi.org/10.1016/j.jenvp.2010.10.001

Lin, W. C. (2013). An ethnic enclave transformed into a tourism enclave under globalisation in Taiwan. *International Journal of Liability and Scientific Enquiry, 6*(4), 247-256. https://doi.org/10.1504/IJLSE.2013.060847

Loureiro, S. M. C. (2014). The role of the rural tourism experience economy in place attachment and behavioral intentions. *International Journal of Hospitality Management, 40*, 1-9. https://doi.org/10.1016/j.ijhm.2014.02.010

Ma, X., Wang, R., Dai, M., & Ou, Y. (2021). The influence of culture on the sustainable livelihoods of households in rural tourism destinations. *Journal of Sustainable Tourism*, *29*(8), 1235-1252. https://doi.org/10.1080/09669582.2020.1826497

Mahardika, H., Thomas, D., Ewing, M. T., & Japutra, A. (2019). Predicting consumers' trial/adoption of new technology: Revisiting the behavioral expectations–behavioral intentions debate. *The International Review of Retail, Distribution and Consumer Research, 29*(1), 99-117. https://doi.org/10.1080/09593969.2018.1537192

Majeed, I. (2019). Understanding positivism in social research: A research paradigm of inductive logic of inquiry. *International Journal of Research in Social Sciences, 9*(11), 118-125.

Mitiku, T. B. (2018). *Department of marketing management factors affecting the level of competitiveness of Bahir Dar City as a tourist destination* [Doctoral Dissertation, Addis Ababa University]. file:///C:/Users/OPTIPLEX%205250%20AIO/Downloads/TENSAEBITEW.pdf

Mohajan, H. K. (2018). Qualitative research methodology in social sciences and related subjects. *Journal of Economic Development, Environment and People*, *7*(1), 23-48. https://doi.org/10.26458/jedep.v7i1.571

Mosbah, A., & Saleh, A. A. (2014). A review of tourism development in Malaysia. *European Journal of Business and Management, 6*(5), 1-9.

Mulet-Forteza, C., Lunn, E., Merigo, J. M., & Horrach, P. (2021). Research progress in tourism, leisure and hospitality in Europe (1969–2018). *International Journal of Contemporary Hospitality Management, 33*(1), 48-74. https://doi.org/10.1108/IJCHM-06-2020-0521

Musa, G. (2012). 10 Tourism in Malaysia. In M. Hall & S. Page (Eds.), *Tourism in South and Southeast Asia: Issues and cases* (pp. 144-156). Routledge.

Nadalipour, Z., Khoshkhoo, M. H. I., & Eftekhari, A. R. (2019). An integrated model of destination sustainable competitiveness. *Competitiveness Review: An International Business Journal*, *29*(4), 314-335. https://doi.org/10.1108/CR-12-2017-0086

Nasir, M. N. M., & Ghani, N. (2021). The mediating role of place attachment on the perceived value and destination loyalty relationship: A conceptual model. *Jurnal Penyelidikan Islam dan Kontemporari. 4*(9),8-13.

Nasr, N. E. S. (2017). Raising competitiveness for the travel and tourism industry (The case of Egypt). *International Journal of Heritage, Tourism, and Hospitality*, *10*(2/2), 1-23.

Neilson, J. (2015). *Milwaukee's ethnic festivals: Creating ethnic-American heritage for urban ethnic tourism* [Doctoral dissertation, The University of Wisconsin-Milwaukee]. https://www.proquest.com/openview/8e49842ba57f9cda92df206c979ac310/1.pdf?cbl=18750&pq-origsite=gscholar

Novais, M. A., Ruhanen, L., & Arcodia, C. (2018). Destination competitiveness: A phenomenographic study. *Tourism Management*, *64*, 324-334. https://doi.org/10.1016/j.tourman.2017.08.014

Nursyamsiah, R. A., & Setiawan, R. P. (2023). Does place attachment act as a mediating variable that affects revisit intention toward a revitalized park? *Alexandria Engineering Journal*, *64*, 999-1013. https://doi.org/10.1016/j.aej.2022.08.030

Park, Y. S., Konge, L., & Artino, A. R. (2020). The positivism paradigm of research. *Academic Medicine*, *95*(5), 690-694. https://doi.org/10.1097/ACM.0000000000003093

Peroff, D. M., Morais, D. B., Seekamp, E., Sills, E., & Wallace, T. (2020). Assessing residents' place attachment to the Guatemalan Maya landscape through mixed methods photo elicitation. *Journal of Mixed Methods Research*, *14*(3), 379-402. https://doi.org/10.1177/1558689819845800

Prayag, G. (2009). Tourists' evaluations of destination image, satisfaction, and future behavioral intentions—The case of Mauritius. *Journal of Travel & Tourism Marketing*, *26*(8), 836-853. https://doi.org/10.1080/10548400903358729

Prayag, G., & Ryan, C. (2012). Antecedents of tourists' loyalty to Mauritius: The role and influence of destination image, place attachment, personal involvement, and satisfaction. *Journal of travel research*, *51*(3), 342-356. https://doi.org/10.1177/0047287511410321

Qian, J., & Xue, L. (2024). Perceived value, place identity, and behavioral intention: An investigation on the influence mechanism of sustainable development in rural tourism. *Sustainability, 16*(4), 1583. https://doi.org/10.3390/su16041583

Raju, M., & Kunasekaran, P. (2022). Role of stakeholders and perceived destination competitiveness towards ethnic enclave destination management: An overview of "Little India" in Malaysia. In M. Valeri (Ed.), *New governance and management in touristic destinations* (pp.182-200). IGI Global. https://doi.org/10.4018/978-1-6684-3889-3.ch011

Ramkissoon, H. (2016). Place satisfaction, place attachment and quality of life: Development of a conceptual framework for island destinations. *Sustainable Island Tourism: Competitiveness and quality of life*, 106-116. https://doi.org/10.1079/9781780645421.0106

Ramkissoon, H., & Mavondo, F. T. (2017). Pro-environmental behavior: Critical link between satisfaction and place attachment in Australia and Canada. *Tourism Analysis. 22*(1), 59-73. https://doi.org/10.3727/108354217X14828625279735

Rath, J., Bodaar, A., Wagemaakers, T., & Wu, P. Y. (2018). Chinatown 2.0: The difficult flowering of an ethnically themed shopping area. *Journal of Ethnic and Migration Studies*, *44*(1), 81-98. https://doi.org/10.1080/1369183X.2017.1332521

Saarinen, J. & Wall-Reinius, S. (2019). Enclaves in tourism: Producing and governing exclusive spaces for tourism. *Tourism Geographies*: *An International Journal of Tourism, Space, Place and Environment,21*(5), 739-748. https://doi.org/10.1080/14616688.2019.1668051

Scannell, L., & Gifford, R. (2010). Defining place attachment: A tripartite organizing framework. *Journal of Environmental Psychology*, *30*(1), 1-10. https://doi.org/10.1016/j.jenvp.2009.09.006

Shahbaz, M., Solarin, S. A., Azam, M., & Tiwari, A. K. (2020). Tourism-induced income distribution in Malaysia: A practical experience of a truly Asian economy. *Current Issues in Tourism, 23*(23), 2910-2929. https://doi.org/10.1080/13683500.2019.1697648

Sithas, M. T. M., & Surangi, H. A. K. N. S. (2021). Systematic literature review on ethnic minority entrepreneurship. *Journal of Ethnic and Cultural Studies*, *8*(3), 183-202. https://doi.org/10.29333/ejecs/791

Song, H. M., Kim, K. S., & Yim, B. H. (2017). The mediating effect of place attachment on the relationship between golf tourism destination image and revisit intention. *Asia Pacific Journal of Tourism Research*, *22*(11), 1182-1193. https://doi.org/10.1080/10941665.2017.1377740

Song, H., & Kim, J. H. (2022). Effects of history, location and size of ethnic enclaves and ethnic restaurants on authentic cultural gastronomic experiences. *International Journal of Contemporary Hospitality Management*, *34*(9), 3332-3352. https://doi.org/10.1108/IJCHM-09-2021-1126

Sthapit, E., Kumaran, P. S., & Bjork, P. (2020). Tourists' motivations, emotions and memorable local food experiences. *Gastronomy and Tourism*, *5*(1), 17-32. https://doi.org/10.3727/216929720X15968961037881

Stone, M. J., Soulard, J., Migacz, S., & Wolf, E. (2018). Elements of memorable food, drink, and culinary tourism experiences. *Journal of Travel Research*, *57*(8), 1121-1132. https://doi.org/10.1177/0047287517729758

Su, M. M., Long, Y., Wall, G., & Jin, M. (2016). Tourist–community interactions in ethnic tourism: Tuva villages, Kanas Scenic Area, China. *Journal of Tourism and Cultural Change*, *14*(1), 1-26. https://doi.org/10.1080/14766825.2014.976228

Teixeira, S. J., Ferreira, J. J., Almeida, A., & Parra-Lopez, E. (2019). Tourist events and satisfaction: A product of regional tourism competitiveness. *Tourism Review*, *74*(4), 943-977. https://doi.org/10.1108/TR-12-2018-0181

Thirumaran, K. (2022). Affinity tourism. In D. Buhalis (Ed.), *Encyclopedia of tourism management and marketing* (pp. 73-75). Edward Elgar Publishing. https://doi.org/10.4337/9781800377486.affinity.tourism

Tsai, C. T. (2016). Memorable tourist experiences and place attachment when consuming local food. *International Journal of Tourism Research, 18*(6), 536-548. https://doi.org/10.1002/jtr.2070

Utami, C. W. (2017). Attitude, subjective norm, perceived behaviour, entrepreneurship education and self efficacy toward entrepreneurial intention university student in Indonesia. *European Research Studies Journal, XX*(2A), 475-495. https://doi.org/10.35808/ersj/654

Wan Mohd Zain, W. M. A. (2019). Perspectives on regional food tourism development: The case of food producers and tourists in East Coast Malaysia (ECM) [Doctor of Philosophy in Management Studies, University of Exeter]. https://www.proquest.com/openview/2be6e012cf602787202695cea5c7ed93/1.pdf?cbl=51922&diss=y&pq-origsite=gscholar

Woosnam, K. M., Maruyama, N. U., Ribeiro, M. A., & Joo, D. (2019). Explaining minority residents' attitudes of ethnic enclave tourism from general perceptions of tourism impacts. *Journal of Tourism and Cultural Change*, *17*(4), 467-484. https://doi.org/10.1080/14766825.2019.1601407

Woosnam, K. M., Stylidis, D., & Ivkov, M. (2020). Explaining conative destination image through cognitive and affective destination image and emotional solidarity with residents. *Journal of Sustainable Tourism*, *28*(6), 917-935. https://doi.org/10.1080/09669582.2019.1708920

Yang, S., Liu, Y., & Xu, L. (2024). The effect of food tourism experiences on tourists' subjective well-being. *Heliyon, 10*(3), e25482. https://doi.org/10.1016/j.heliyon.2024.e25482

Yang, L., & Wall, G. (2016). *Planning for ethnic tourism*. Routledge. https://doi.org/10.4324/9781315600741

Yang, X. (2018). *The effect of culture tourism development on ethnic minorities and its influence on the visitor experience: Case study Lijiang, China* [Doctoral dissertation, Auckland University of Technology].

Zainuddin, Z., Radzi, S. M., & Zahari, M. S. M. (2016). Perceived destination competitiveness of Langkawi Island, Malaysia. *Procedia-Social and Behavioral Sciences*, *222*, 390-397. https://doi.org/10.1016/j.sbspro.2016.05.190

Zimmerman, J. (2008). From brew town to cool town: Neoliberalism and the creative city development strategy in Milwaukee. *Cities*, *25*(4), 230-242. https://doi.org/10.1016/j.cities.2008.04.006

Zhuang, L., Taylor, T., Beirman, D., & Darcy, S. (2017). Socially sustainable ethnic tourism: a comparative study of two Hakka communities in China. *Tourism Recreation Research*, *42*(4), 467-483. https://doi.org/10.1080/02508281.2017.1338817

REFEREES FOR THE PERTANIKA
JOURNAL OF SOCIAL SCIENCES & HUMANITIES

Vol. 33 (2) Apr. 2025

The Editorial Board of the Pertanika Social Sciences & Humanities wishes to thank the following:

Scott Slovic
(University of Idaho, USA)

Singhanat Nomnian
(MU, Thailand)

Syahraini Tambak
(UIR, Indonesia)

Shamina Vera Borisovna
(KFU, Russia)

Stamatios Papadakis
(UoC, Greece)

Tan Shin Yen
(Taylor's, Malaysia)

While every effort has been made to include a complete list of referees for the period stated above, however if any name(s) have been omitted unintentionally or spelt incorrectly, please notify the Chief Executive Editor, *Pertanika* Journals at executive_editor.pertanika@upm.edu.my

Any inclusion or exclusion of name(s) on this page does not commit the *Pertanika* Editorial Office, nor the UPM Press or the university to provide any liability for whatsoever reason.

Selected papers from the Ethnic Minorities and Community Development
Guest Editor: Sarjit S. Gill and Puvaneswaran Kunasekaran