A special issue devoted to
Bridging Academic & Global Halal Industry

Guest Editors
Siti Khadijah Ab Manan, Rafeah Saidon
& Noorul Huda Sahari

A scientific journal published by Universiti Putra Malaysia Press
About the Journal

Overview
Pertanika Journal of Social Sciences & Humanities (JSSH) is the official journal of Universiti Putra Malaysia published by UPM Press. It is an open-access online scientific journal which is free of charge. It publishes the scientific outputs. It neither accepts nor commissions third party content.

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

JSSH is a quarterly (March, June, September and December) periodical that considers for publication original articles as per its scope. The journal publishes in English and it is open to authors around the world regardless of the nationality.

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—Accounting, anthropology, Archaeology and history, Architecture and habitat, Consumer and family economics, Economics, Education, Finance, Geography, Law, Management studies, Media and communication studies, Political sciences and public policy, Population studies, Psychology, Sociology, Technology management, Tourism; Humanities—Arts and culture, Dance, Historical and civilisation studies, Language and Linguistics, Literature, Music, Philosophy, Religious studies, Sports.

History
Pertanika was founded in 1978. A decision was made in 1992 to streamline Pertanika into three journals as Journal of Tropical Agricultural Science, Journal of Science & Technology, and Journal of Social Sciences & Humanities to meet the need for specialised journals in areas of study aligned with the interdisciplinary strengths of the university.

After almost 25 years, as an interdisciplinary Journal of Social Sciences & Humanities, the revamped journal focuses on research in social and behavioural sciences as well as the humanities, particularly in the Asia Pacific region.

Goal of Pertanika
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 are guaranteed to receive a decision within 14 weeks. The elapsed time from submission to publication for the articles averages 5-6 months.

Abstracting and indexing of Pertanika
Pertanika is almost 40 years old; this accumulated knowledge has resulted in Pertanika JSSH being abstracted and indexed in SCOPUS (Elsevier), Thomson (ISI) Web of Science™ Core Collection Emerging Sources Citation Index (ESCI). Web of Knowledge [BIOSIS & CAB Abstracts], EBSCO and EBSCOhost, DOAJ, Google Scholar, TIB, MyCite, ISC, Cabell’s Directories & Journal Guide.
Future vision
We are continuously improving access to our journal archives, content, and research services. We have the drive to realise exciting new horizons that will benefit not only the academic community, but society itself.

Citing journal articles

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 takes seriously the responsibility of all of its journal publications to reflect the highest in 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

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. All Pertanika journals have ISSN as well as an e-ISSN.

Journal of Social Sciences & Humanities: ISSN 0128-7702 (Print); ISSN 2231-8534 (Online).

Lag time
A decision on acceptance or rejection of a manuscript is reached in 3 to 4 months (average 14 weeks). The elapsed time from submission to publication for the articles averages 5-6 months.

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
Refer to Pertanika’s INSTRUCTIONS TO AUTHORS at the back of this journal.

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, and References. Additionally, some papers include Acknowledgments and Appendices.

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 INSTRUCTIONS TO AUTHORS.

Editorial process
Authors 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 usually sent to reviewers. Authors are encouraged to suggest names of at least three potential reviewers at the time of submission of their manuscript to Pertanika, but the editors will make the final choice. The editors are not, however, bound by these suggestions.

Notification of the editorial decision is usually provided within ten to fourteen weeks 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 might identify authorship of the paper should be placed only on page 2 as described in the first-4 page format in Pertanika’s **INSTRUCTIONS TO AUTHORS** given at the back of this journal.

**The Journal’s peer-review**

In the peer-review process, three referees independently evaluate the scientific quality of the submitted manuscripts.

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 seven steps to the editorial review process:

1. The Journal’s chief executive editor and the editorial board examine the paper to determine whether it is appropriate for the journal and should be reviewed. 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 three reviewers. Typically, one of these is from the Journal’s editorial board. Others are specialists in the subject matter represented by the article. The chief executive editor asks them to complete the review in three 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 literature.

3. The chief executive editor, in consultation with the editor-in-chief, examines the reviews and decides whether to reject the manuscript, invite the author(s) to revise and resubmit the manuscript, or seek additional reviews. Final acceptance or rejection rests with the Editor-in-Chief, who reserves the right to refuse any material for publication. In rare instances, the manuscript is accepted with almost no revision. Almost without exception, reviewers’ comments (to the author) are forwarded to the author. If a revision is indicated, the editor provides guidelines 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 answered the concerns of the reviewers and the editor, usually in a tabular form. The author(s) may also submit a rebuttal if there is a need especially when the author disagrees with certain comments provided by reviewer(s).
5. The chief executive editor sends the revised paper out for re-review. Typically, at least one of the original reviewers will be asked to examine the article.

6. When the reviewers have completed their work, the chief executive editor in consultation with the editorial board and the editor-in-chief examine their comments and decide whether the paper is ready to be published, needs another round of revisions, or should be rejected.

7. If the decision is to accept, an acceptance letter is sent to all the author(s), the paper is sent to the Press. The article should appear in print in approximately three months.

The Publisher ensures that the paper 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 Publisher. 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 article appears in the pages of the Journal and is posted on-line.
EDITOR-IN-CHIEF
Mohd. Shahwahid Hj. Othman
Economics, Natural Resource & Environmental Economics, Economics Valuation

CHIEF EXECUTIVE EDITOR
Nayan Deep S. Kanwal
Environmental Issues – Landscape Plant Modelling Applications

UNIVERSITY PUBLICATIONS COMMITTEE
Husaini Omar, Chair

EDITORIAL STAFF
Journal Officers: Chai Sook Keat, ScholarOne Kanagamalar Silvarajoo, ScholarOne Tee Syin-Ying, ScholarOne Ummi Fairuz Hanapi, Publication Officer
Editorial Assistants: Florence Jiyoum Rahimah Razali Zulinaaardawati Kamaruddin

COPY EDITORS
Crescinta Morais Doreen Dillah Pooja Terasha Stanisla

PRODUCTION STAFF
Pre-press Officers: Kanagamalar Silvarajoo Nur Farrah Dila Ismail Wong Lih Jiun
Layout & Typeset: Lillian Loh Kian Lin Wong Wai Mann

WEBMASTER
Mohd Nazri Othman

PUBLICATION & PRESS RELEASE
Magdalene Pokar (ResearchSEA) Florence Jiyoum

EDITORIAL OFFICE
JOURNAL DIVISION
Office of the Deputy Vice Chancellor (R&D)
1st Floor, IDEA Tower II
UPM-MTDC Technology Centre
Universiti Putra Malaysia
43400 Serdang, Selangor, Malaysia.

PUBLISHER
UPM Press
Universiti Putra Malaysia
43400 UPM, Serdang, Selangor, Malaysia.
Tel: +603 8946 8855, 8946 8854
Fax: +603 8941 6172
E-mail: penerbit@upm.edu.my
URL: http://penerbit.upm.edu.my

EDITORIAL BOARD
2015-2017
Alan Maley English Language Studies, Teaching of English Language and Literature, Leeds Metropolitan University, UK.
Ali Reza Kaldi Medical Sociology, Sociology of Development Apag, Gerontology, University of Social Welfare and Rehabilitation, Tehran, Iran.
Aminah Ahmad Sociology, Gender and Development, Universiti Putra Malaysia, Malaysia.
Bee-Hoon Tan Faculty of Social Sciences and Liberal Arts, UCS University, Malaysia.
Brian Tomlinson English Language Studies, The Evaluation, Adaptation and Development, Leeds Metropolitan University, UK.
Deanna L. Sharpe Economics, Consumer and Family Economics, Personal Finance, The University of Missouri, Columbia, USA.
Dessy Irawati International Business Management, Strategic Management, Economic Geography, Globalisation and Development Studies, Industrial Dynamics and Knowledge Transfer, Radboud University, the Netherlands and Erasmus Research, The Netherlands.
Elia @ Ilia Salleh Kalyup of Architecture and Environmental Design (RAED), Universiti Islam Antarabangsa Malaysia, Malaysia.
Gong-Song Hong Economics, Consumer and Family Sciences, The Ohio State University, USA.
Jacqueline Pugh-Kitingan Music, Ethnomusicology, Bonnie and Popa New Guinea Studies, Universiti Malaysia Sabah, Malaysia.
James R. Stock Management Studies, Marketing, and Supply Chain Management, Quantitative Method, University of South Florida, USA.
Jayakaran Mukundan English Language Studies, Teaching English as a Second Language (ESL), English Language Studies, Universiti Putra Malaysia, Malaysia.
Jayum A. Jawan Sociology, Politics and Government, Civilisation Studies, Universiti Putra Malaysia, Malaysia.
Jonathan Newton Classroom-based Second Language Acquisition, Language Teaching Methodology, the Interface of Culture and Language in Language Teaching and Learning, and Language/Communication Training and Material Design for the Multicultural Workplace, Victoria University of Wellington, New Zealand.
Marcus Bion GRiffin Human Ecology, Anthropology, Tropical Agriculture, Fisheries, Cultural Learning Solutions, USA.
Mary Susan Philip English Language Theatre in Malaysia and Singapore, Pastoral Theology, University of Malaysia, Malaysia.
Muzaffar Shah Habibullah Economics, Monetary Economics, Banking, Macroeconomics, Universiti Putra Malaysia, Malaysia.
Patricia Matsuku Music, Ethnomusicology, Malay and Indonesian language, literature and Culture, Grand Valley State University, USA.
Rohany Nasir Psychology-Consumer Mentality, Counseling for Adolescents and Adults, Marriage and Family counseling, Counseling industry and Organization, Universiti Kelabanganas Malaysia, Malaysia.
Samsinar Md. Sidin Management Studies, Marketing, Consumer Behaviour, Universiti Putra Malaysia, Malaysia.
Shameer Rafiq-Galea English Language Studies, Linguistics, Applied Linguistics and Language Communication, Universiti Putra Malaysia, Malaysia.
Shamsher Mohamad Ramadil Mohd Finance, Corporate Governance, The Global University of Islamic Finance (INCEIF) Malaysia.
Stephen J. Hall English Language Studies, English, Teacher Educator, TEDx, Survey University College, Malaysia.
Stephen J. Thoma Psychology, Educational Psychology, The University of Alabama, UK.
Swee-Heng Chan Malay.
Turim Suandi Psychology, South Development and Voluntarism, Universiti Putra Malaysia, Malaysia.
Victor T. King Anthropology & Southeast Asian Studies White Rose East Asia Centre, University of Leeds, UK.

INTERNATIONAL ADVISORY BOARD
2017-2019
Barbara Wejvert Political Sociology; Gender Studies, Moore Political and Social Changes, University at Buffalo, SUNY, USA.
Carolyn Graham Mics, Art History, Harvard University, USA.
David Nunan Vice-President; Academic, Angham University, California, English Language Studies, Lingual, TESOL, University of Hong Kong, Hong Kong.
Faith Trent AM FACE Education; Curriculum development, Flinders University, Adelaide, Australia.
Graham Thurgood English Language Studies, General Linguistics, Discourse and America, California State University, Chico, California, USA.
Handoyo Puji Widojo English Language Centre, Surabua University, Indonesia.
Kent Matthews Economics, Banking and Finance, Modelling and Forecasting the Macro Economy, Cardiff Business School, UK.
Lehman B. Fletcher Economics, Agricultural Development, Policy Analysis and Planning, Iowa State University, USA.
Mark P. Orbe Communication, Interpersonal Communication, Communication and Diversity, Interpersonal Communication, Western Michigan University, USA.
Mohamed Ariff Department of Economics and Finance, Sunway University, Malaysia.
Pal Amlawala Pro Vice-Chancellor (Research and Innovation), African Studies, Social and Cultural Theory, Postcolonial Theory, Division of Education, Arts & Social Sciences, University of Portsmouth, United Kingdom.
Philip Jones Architectural Science, Sustainability in the Built Environment, Welsh School of Architecture, Cardiff University, UK.
Rance P. L. Lee Sociology, The Chinese University of Hong Kong.
Royal D. Cole Communication, Cornell University, USA.
Shonda Buchanan Louisiana State University, Louisiana, USA.
Vijay K. Bhata Education; Genre Analysis and Professional Communication, City University of Hong Kong

ABSTRACTING AND INDEXING OF PERTANIKAJOURNALS
Pertanika is almost 40 years old; this accumulated knowledge has resulted in the journals being abstracted and indexed in SCOPUS (Elsevier), Clarivate Analytics (formerly known as Thomson (ISI) Web of Science® Core Collection - Emerging Sources Citation Index (ESCI) - Web of Knowledge (ISI®), CAB Abstracts, EBSCO and EBSCOhost, DOAJ, DRA, Google Scholar, TIB, MyCite, Islamic World Science Citation Center (ISC), ASEAN Citation Index (ACI), Cabell’s Directories & Journal Guide.

The publisher of Pertania shall not be responsible for the statements made by the authors in any articles published in the journal. Under no circumstances will the publisher of this publication be liable for any loss or damage caused by your reliance on the advice, opinion or information obtained either explicitly or implied through the contents of this publication.

The publisher of Pertania will not be responsible for the statements made by the authors in any articles published in the journal. Under no circumstances will the publisher of this publication be liable for any loss or damage caused by your reliance on the advice, opinion or information obtained either explicitly or implied through the contents of this publication.

No material published in Pertania may be reproduced or stored on microfilm or in electronic, optical or magnetic form without the written authorization of the Publisher.

Copyright © 2017-18 Universiti Putra Malaysia Press. All Rights Reserved.
Preface

The halal industry is expanding with an estimated trading value of more than a trillion US dollar globally. In addition to Muslim demand for halal food, the non-Muslim increasing awareness and need for clean and hygienic food has contributed to the booming of the industry. The scope of the halal concept has widened going beyond food and beverages which has led to a larger and more intense market penetration. Though the industry is growing rapidly, academics are still catching up with the real challenges of the halal world.

This, this edition of Pertanika Journal of Social Science & Humanities (JSSH) contains 20 papers which were originally presented at the International Halal Conference 2016 (INHAC 2016), held between 21 – 22 November 2016. The conference was organised by Academy of Contemporary Islamic Studies (ACIS), Universiti Teknologi MARA (UiTM) Shah Alam with the collaboration of Ministry of International Trade & Industry (MITI), Jabatan Kemajuan Islam Malaysia (JAKIM), World Halal Development (WHAD) and Halal Industry Development Corporation (HDC). This special edition has retained the theme of the conference, “Bridging academic and global halal industry”. The guest editors express their gratitude to Academy of Contemporary Islamic Studies (ACIS), Universiti Teknologi MARA (UiTM) Shah Alam, in particular its Dean, Prof. Dr. Muhamad Rahimi Osman and Deputy Dean of Research and Industrial Linkages Assoc. Prof. Ezani Yaakob for their moral and financial support which had enabled the publication of this issue.

All the papers published in this edition underwent Pertanika’s rigorous peer-review process involving a minimum of two reviewers comprising internal as well as external referees. This was to ensure 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.

Gratitude also goes to committee members of INHAC 2016 for organising the conference. The journal is also deeply appreciative of the hard work put in by the authors of the papers as well as reviewers for their diligence and rigour in provided quality feedback.

Last but not least, a special appreciation to Dr. Nayan Kanwal, Chief Executive Editor, Pertanika Journals, and his dedicated publication team for their generous guidance and commitment.

Guest Editors:
Siti Khadijah Ab Manan (Assoc. Prof. Dr.)
Rafeah Saidon (Dr.)
Noorul Huda Sahari (Dr.)
Najahudin Lateh (Dr.)

December 2017
## Contents

**Bridging Academic & Global Halal Industry**

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maslahah Approach in Halal-Logistics Operation</td>
<td>1</td>
</tr>
<tr>
<td><em>Hanifah, M. F. H., Rafeah, S., Zakiah, S., Zulaipa, R. and Munirah, A.</em></td>
<td></td>
</tr>
<tr>
<td>Industry Need for Educators in Shariah Compliant Financial Services</td>
<td>15</td>
</tr>
<tr>
<td><em>Siti Khadijah, A. M. and Ezani, Y.</em></td>
<td></td>
</tr>
<tr>
<td>Supplier Management in Halal Food Supply Chain: A Preliminary Case Study</td>
<td>25</td>
</tr>
<tr>
<td><em>Tatsuya Fujiwara</em></td>
<td></td>
</tr>
<tr>
<td><em>Al-Taifiq</em> as an Innovative Solution for Primary Fiqh Issues in Halal Supply Chain Operations*</td>
<td>39</td>
</tr>
<tr>
<td><em>Mohd Dasuqkhi Mohd Sirajuddin, Muhamad Rahimi Osman, Harlina Suzana Jaafar and Mohd Yakub@Yusoff</em></td>
<td></td>
</tr>
<tr>
<td>Halal Culinary Tracking Application at Food Souvenirs Center Based on Analytical Hierarchy Process (AHP) Method</td>
<td>51</td>
</tr>
<tr>
<td><em>Sucipto Sucipto, Mas‘ud Effendi, Mochamad Ulul Khilmi, Muhammad Arif Kamal, Aryo Pinandito and Herman Tolle</em></td>
<td></td>
</tr>
<tr>
<td>Review Article on Potentials of Big Data in the Halal Industry</td>
<td>65</td>
</tr>
<tr>
<td><em>Tan, M. I. I., Fezarudin, F. Z., Yusof, F. M., Rosman, A. S. and Husny, Z. J. M.</em></td>
<td></td>
</tr>
<tr>
<td>Perceived Value and Satisfaction towards Shariah-Compliant Hotel</td>
<td>77</td>
</tr>
<tr>
<td><em>Nurul Azhani, M. A., Zainab, K. and Hairul, N. I.</em></td>
<td></td>
</tr>
<tr>
<td>Optimising Malaysian Shariah-Compliant Real Estate Investment Trusts: Perspective of REIT Managers</td>
<td>89</td>
</tr>
<tr>
<td><em>Nor Nazihah Chuweni, Chris Eves and Andrea Blake</em></td>
<td></td>
</tr>
<tr>
<td>Purchase Intention of Islamic Brand Product among Non-Muslim Customers</td>
<td>101</td>
</tr>
<tr>
<td><em>Ya, S., Nor, M. M. N., Noor, S. M. and Ahmad, Z.</em></td>
<td></td>
</tr>
<tr>
<td>Element of Swine from the Perspective of Fiqh Ruling and Fatwa in Malaysia</td>
<td>111</td>
</tr>
<tr>
<td><em>Azri, B., Mohammad Mahyuddin, K., Luqman, A., Mohd Ashrof Zaki, Y., Mohd Dasuqkhi, M. S. and Mohd Solahuddin, S.</em></td>
<td></td>
</tr>
</tbody>
</table>
The Role of Ar-Rahnu’s Benefits – Sacrifices Exchange towards Relationships between Customers and Islamic Financial Institutions
Rafidah Mohd Azli, Mohd Rizal Palil, Shifa Mohd Nor, Mohamad Abdul Hamid and Zainudin Awang

Relationship between Knowledge, Attitude, and Religiosity with the Intention to Provide Halal Maintenance among Muslim Fathers in Malaysia
Sa’odah Ahmad, Rojanah Kahar and Muslihah Hasbullah

Buying Halal Pharmaceutical Products: Do Consumers Have Imperfect Knowledge?
Nur Famiza, A., Nor Samsinar, K., Kursimah, H. and Radin Firdaus, R. B.

Applying the Fuzzy Delphi Method (FDM) to Analyze the Expert Consensus Values for Instrument of Shariah-Compliant Gold Investment
Najahudin Lateh, Salmy Edawati Yaacob and Siti Noobiah Md Rejab

Consumers’ Perception of Islamic Credit Cards: An Exploratory Study

Regulating Polygamous Marriage to Prevent its Abuse: A Case Study of Malaysia
Rafeah, S., Hanifah, M. F. H., Zakiah, S., Fadhilah Adibah, I. and Nur Zahidah, H. J.

Merging the Research on Halal Concept Using Humanoids for Patient with Brain-Impairment: Its Maqasid and Principles
Siti Fatahiyah, M. and Hanapiah, F. A.

Judicial Approaches in Custodial Cases Relating to Mumayyiz Children
Hashim, N. H., Ngatiman, S., Sahari, N. H. and Alias, B.

Studies on Technology and Halal Food Security: A Review
Nur Syahidah Jalil, Azah Anir Norman and Suraya Hamid

Spousal Contribution and Fair Division of Matrimonial Assets: A Case Study of Malaysian Muslims
Noorul Huda, S., Najibah, M. Z. and Siti Khadijah, A. M.
**Maslahah Approach in Halal-Logistics Operation**

Hanifah, M. F. H.¹*, Rafeah, S.¹, Zakiah, S.¹, Zulaipa, R.¹ and Munirah, A.²

¹Academy of Contemporary Islamic Studies (ACIS), Universiti Teknologi MARA (UiTM), 40450 Shah Alam, Selangor, Malaysia
²Academy of Language Study, Universiti Teknologi MARA (UiTM) Johor, 85000 Segamat, Johor, Malaysia

**ABSTRACT**

Halal logistics is part of halal supply chain and it covers warehousing, transportation and terminal operations. Thus, this study aims to examine the scope of halal logistics and its applicability for Muslim and non-Muslim countries. Apart from that, an established Shari'ah principle, namely the maslahah concept, will be appraised with a special focus on contamination in halal-logistics. The prominent Muslim scholars’ views on maslahah and its application in this industry are also analysed. This is a qualitative study using descriptive and explanatory approaches. It employs content analysis to review systematically the facts derived from various literature and documents. This study shows maslahah plays a significant role in the operations of halal-logistics to protect public interest. It suggests that in handling the contamination issue in the halal-logistics system, the maslahah approach is a best practice that should be widely adopted. Moreover, it is believed that the maslahah approach could serve as a benchmark with the existing halal standard and constitute a sufficient measure for implementation of effective halal-logistics.

**Keywords:** Best practice, contamination, fiqh, halal-logistics, maslahah

**INTRODUCTION**

Allah commands us to consume halal, wholesome and good food. By definition, *Halalan Tayyiban* is not confined to consuming halal food, its ingredients and sources need to be permissible, and it should be prepared in accordance with Islamic principles. The concept of halal also includes food production and processing as its primary goal to protect its followers...
from consuming harmful and unclean products and from using services provided in an unjust and oppressive manner (Nazery, 2009). This concept of halal governing food and goods consumed has been emphasised in Quran. In al-Baqarah, verse 168, Allah stated: “O’ mankind! Eat of what is in the earth lawful and good; and do not follow the footsteps of Satan. Surely he is a manifest foe for you.”

Similarly, according to Al-Ghazali (1986, p. 47), choosing halal food as prescribed by Islamic legal rulings will develop one’s spiritual and physical wellbeing. This shows it is not permissible to consume food which is clearly prohibited. Apart from that, effort should be made to avoid consuming syubhah (doubtful) food. As the awareness towards the concept of halal has increased significantly, so has the demand for halal products and services. High quality and hygiene standards associated with halal have gained global recognition and acceptance. This recognition stems from the fact that halal is not exclusive to Muslims but is also applicable to non-Muslims. It encompasses a broad spectrum of sectors and services and has proven effective in generating good income for related sectors. A review of literature shows the halal industry has a potential for great growth in developed countries.

Malaysia aspires to be a global halal hub and a gateway to halal products and services. In order to achieve that, several measures have been implemented such as the establishment of the Third Industrial Master Plan (IMP3) with the primary aim to develop Malaysia into a regional halal hub for selected products, halal services, manufacturing as well as commercial goods. Halal policies and strategies have also been accordingly implemented such as establishing global halal standard governing the process of auditing and halal certificate for the growth of the global halal industry.

With the growing demands for halal foods, goods and services, the halal industry has expanded from the service sectors (i.e. logistic, packaging, branding and marketing) into pharmaceutical products, cosmetics, finance, entertainment, investment, tourism and to name a few. Apart from food production, other related halal industry products and services are in demand from Muslims. Thus, the entire spectrum of the supply chain, involving a broad range of activities such as certification, procurement, packaging, transportation, distribution, storage, financing, auditing, accounting and insurance have been given greater attention.

Tieman (2013) claims, given the vulnerability of halal food supply chains, the size and growth of the halal market coupled with stringent halal regulations have forced the industry players to extend the halal logistics to cover consumer purchase. Thus, further scrutiny on the logistics of halal food is pertinent. Nazery (2009) points to a growing requirement for halal standards and compliance with certification and logistics to estimate and understand the needs of the growing global halal market. Currently, 31 logistics companies in Malaysia have been certified as Halalan Tayyiban Assurance Pipeline Management.
System (MS2400:2010) Part 1 for Transportation and Part 2 for Warehousing. The number of logistics companies with halal logistics certifications would increase due to the increase in awareness on the importance of halal logistics standard (MS2400:2010) and the willingness of the companies to practice halal logistics (Teh Zaharah, Harlina Suzana, & Fadilah, 2016). However, it appears that this existing halal standard for logistics industry is inadequate. More precisely, the MS2400:2010 Halalan Tayyiban Assurance Pipeline Standard covers transportation, warehousing and retail. It provides general halal compliance requirements for transportation of goods and/or cargo chain services, warehousing and related activities and retailing. Although the requirements and guidelines embedded in MS2400:2010 are generic, in particular, with regard to the requirements for halal compliance identification, premises, packaging, containerisation, handling, transportation, storage and personnel with specific emphasis on compliance control, it appears that logistic providers fail to comply with this respective guideline. To date, JAKIM is yet to certify any service provider in accordance with this Halal Logistics Standard. Rather, the Certificates for halal certification to a few logistics service providers such as Kontena Nasional, MISC Integrated Logistics Sdn. Bhd., Penang Port and others are only based on the MS 1500:2009 under the handling clause (Hadijah, Rohana, & Alwi, 2012).

Nonetheless, although halal certificate has been issued to some halal logistics companies, various issues remain unresolved. The Cadbury controversy in Malaysia between the end of May 2014 to early June 2014 is among the landmark cases on issues of contamination. DNA porcine contamination was detected in two Cadbury products which were labelled as ‘halal’ which led to the suspension of Cadbury’s halal certification for 17 days (Nurhafilah, Mohd Fakarudden, Asmak, & Nazri, 2016). As a consequence, it caused a loss in revenues, tarnished JAKIM’s credibility and led to calls for Muslims to boycott Cadbury chocolate. Most of the discussions nowadays is only related to contamination and do not highlight the debate on other relevant issues. Analysis and assurance of the law against contamination in the logistics operation is complicated as it relates to scientific aspects such as source category of DNA (passenger DNA or pDNA), technique of segregating products, type of host used and the thread behind the management that involves ethics, religion, health, politics, economy as well as safety.

Analysis of the law on contamination in logistics operations depends on a clear understanding of legal procedures and the method of determining it. This may affect the scholars’ understanding and hence disagreement in views in comprehending the meaning of the dictum especially zanniyah al-dilalah. For example, the method as prescribed in the original law is necessary for any material (except in the case of worship) while there is no legislation which denies the proposition. In this case, the Hanafi jurists hold different views on
the methods based on the principle that the original law for any material that is illegal or tawaqquf cannot be used to judge something is lawful as long as there is no evidence that the material is safe for human beings (Muhammad Nur al-Din, 2002).

In view of the above, this study will first examine the scope of halal logistics, its principles and foundations for Muslim and non-Muslim countries. Apart from that, the maslahah concept will be appraised with a special focus on the halal-logistics industry. The prominent Muslim scholars’ views and opinions relating to maslahah and its application in the halal-logistics industry are also analysed. Also, this exploratory study will further highlight that in the absence of the thabit (specific) law governing issues, methods and management of halal logistics, maslahah approach could be adopted to formulate the best practice of halal logistics.

LITERATURE REVIEW

Logistics plays a key role in protecting the integrity of halal food through proper transportation, storage and handling along the supply chain until it reaches its final destination. According to Tieman (2011), halal products and services do not only focus on the usage or purchase but also includes the preparation process. This shows there is an awareness of halal products in every aspect of the supply chain (Zalina, 2004). Thus, ensuring halal sources, and processing method which is Shariah-compliant including water and container for clean food preparation as well as ensuring clean premises and storage are vital. Logistics act as a liaison between suppliers, manufacturers, retailers and end users to ensure the flow of materials and services throughout the supply chain is sustainable.

Tieman (2013) claims “halal logistics is the process of managing the procurement, movement, materials storage and handling, parts, livestock, food and non-food items inventory, related information and documentation of the organisation management and supply chain which comply with the general principles of Shariah” (p. 5). Thus, one of the problems that may be faced is the separation of containers for halal and non-halal items which may result in additional delivery and management cost. According to Zaharah et al. (2016), Halal Logistics Services Provider refers to logistics companies and warehousing services certified with halal status by The Department of Islamic Development of Malaysia (JAKIM) and comply with Shariah requirements in terms of their operation and services. Other than food safety standards, halal food production and logistics process are carefully planned involving strategies, SOPs, work instruction and specification in food process and controls based on Shariah compliance. Thus, food is considered halal if it is halal throughout the entire production chain ranging from production, transportation, storage to retailing. Adam, Siti Norezam and Ezanee (2017a, 2017b) outline the important factors in setting a model for Islamic supply
chain in Malaysia. Several critical factors are proposed in establishing such an Islamic model and framework.

Faried, Mohammad Ali and Akbariah (2017) agreed that the existence of the concept of Maqasid al-Shariah is to create maslahah for all human beings. Thus, the development of Maqasid al-Shariah for business is very important. It has only been developed for the Islamic financial industry. Unfortunately, it is found that the development of Maqasid al-Shariah performance measurement has not been carried out comprehensively in the non-financial industry. Similarly, Abid and Mohd Imran (2017) stressed the need to develop proper guidelines, standards and codes to train the halal logisticians.

Suhaiza, Azmin and Kanagi (2017) discussed the challenges and opportunities for logistics companies in Malaysia to adopt halal logistics. They found that one of the challenges facing the halal logistics is the existence of ambiguous halal guidelines, as it could be a cause of a lengthy certification process and higher cost in halal logistics. Thus, this research is timely to suggest maslahah as one of the important elements in improving the ambiguity of guidelines.

A review of the above literature demonstrates that although the studies on halal-logistics provider are plentiful, there has yet to be a comprehensive study on the application of maslahah with special reference to halal-logistics. In particular, when it comes to the contamination issue within halal-logistics providers and the detailed approach and application of maslahah in handling this issue, the literature is limited.

For the related laws and guidelines applicable in Malaysia, Trade Description Act 2011 Act 730 can be referred. According to the Act, the terms “Muslims food”, “halal” or “Guaranteed Halal” etc. indicates: (i) Do not consist of or contain any substance or any part from animals that are forbidden by syara’ or that was not slaughtered according to syara’; (ii) Do not contain filth; (iii) Is not prepared by, processed by or manufactured by using tools that are not freed from filth; and (iv) During preparation, processing or keeping, it did not make contact or be near to substance that is not fit with syara’.

Another related guideline is the Halalan Tayyiban Assurance Pipeline (HTAPS). It is an important document that has to be referred by every company that provides logistic services for halal products to preserve the safety and purity of the product from farm to the user. This guideline has a flow process for product management that consists of three levels of standards for transportation, storage and trading.

(a) MS2400-1:2010(P) the requirement for commodity transportation management system or service for cargo links.
(b) MS2400-2:2010(P) the requirement for warehouse management system and related activities.
(c) MS2400-3:2010(P) the requirement for the trading management system.

With the existence of the document, the cleanliness and the halal level of a
product can be guaranteed since every flow for the process from the farm to the consumer has a distinct method that is safe as well as acknowledged halal standards. If every logistic company complies with all the methods in HTAPS, it will be easier for the company to obtain halal certification that will give confidence to the consumers, enhance revenue and also the country’s image. Seemingly, food product contamination will occur if there is improper handling, maintenance and segregation of the food products. Also, risks involved in the delivery process of halal products include exposure to haram and hazardous products during transportation and storage (Teh Zaharah et al., 2016).

RESULTS AND DISCUSSION
The Concept of Maslahah (Public Interest) in Islamic Jurisprudence

In Islamic jurisprudence, maslahah or public interest is a basis of law. According to Al-Ghazali, (1997, p. 319), maslahah consists of considerations which secure a benefit or prevent harm but are in the meantime, harmonious with the objectives (maqasid) of the Shariah. These objectives include protecting the five essential values, namely religion, life, intellect, lineage and property. Any measure which secures these values falls within the scope of maslahah, and anything which violates them is mafsadah (evil). Preventing the latter is also maslahah. Thus, in enacting the law, whatever involves the preservation of these five fundamental values is a maslahah and whatever neglects these fundamental values is corrupt and hence repelling it is maslahah.

Muslim scholars have divided maslahah into three categories. First is maslahah al mu’tabarah which refers to maslahah that the Quran and Sunnah have expressly upheld. This type of maslahah cannot be rejected and must be preserved and realised. The second category is maslahah mulgha which refers to any maslahah that has been nullified either by the Quran or Sunnah and should not be upheld. The third category is maslahah mursalah, i.e. the one related to the discussion of this article (Badran, 1984).

The doctrine of maslahah mursalah refers to the unrestricted public interest which is not regulated by Allah, and no textual authority can be found on its validity (Abd al-Wahhab, 1978, p. 84). In this regard,
when the *maslahah* is identified, and the explicit ruling in the text of the Qur’an and Sunnah is not found, the necessary steps should be taken to secure it. It is in this area where the authorities have the discretion to introduce laws and policies and adopt measures to realise public interest.

With regard to this doctrine of *maslahah*, Imam Malik and Ahmad approved the plea as one of the sources of Shariah that could be a proper ground for legislation with the condition that those masalah do not conflict with the objectives (*maqasid*) of the lawgiver (Muhammad, 1997, pp. 246-247). However, this doctrine of *maslahah* according to Mohammad Hashim Kamali is not fully utilised as there exists a wide gap in recent decades between Shariah and statutory legislation. This comment is very important to be taken into a consideration in maximising the application of *maslahah* in halal logistics operation (Mohammad Hashim, 1988).

The determination to apply *maslahah* is largely dependent on the ijtihad of scholars. Their ijtihad is based on the main sources of Islamic law which are al-Quran and al-Sunnah as well as the secondary source which are based on *masadir naqliyat* (*ijmak dan qiyas*), *masadir aqliyyat* (*istishab, istislah istihsaan*), *maqasid shariah* (*objective of shariah*), *qawaid al-fiqh* (*Islamic legal maxims*) and *dhawabit al-fiqh* (*fiqh principles*).

To apply the concept of *maslahah*, both Islamic rulings and human affairs should be adjusted with the suitability of time and place to achieve the Maqasid Shariah. The *maslahah* approach coincides with the aim of Maqasid Shariah which is to protect the survival of the present and future generations. Yusuf Hamid (1991) stated in the effort to determine the goodness and badness that it requires comprehensive study for one and all benefits. Determining the *maslahah* requires cooperation between specialists in the varied fields and Muslim scholars.

**Maslahah Approach towards Halal Issues**

From the perspective of halal implementation in Malaysia, the halal standard used is based on Islamic law in the school of Syafii or any other Islamic law of other schools such as Maliki, Hanbali and Hanafi agreed by Yang di-Pertuan Agong to be enforced in the Federal Territory, or the Ruler or Sultan of a state enforced such laws in their state, or a fatwa endorsed by the authorities of the Islamic religion. MS1500:2004 emphasised: (i) halal food sources including animals (land and water), plants, fungi (mushrooms), microorganisms, natural minerals, chemicals and beverage; (ii) genetically modified foods; (iii) to determine the food is safe, not toxic or harmful to health; and (iv) the conditions for the slaughter of poultry and ruminants. The standard also touched on the obligation to separate the production, preparation and handling of halal and non-halal food. As for storage activities, halal products should be labelled clearly to avoid being mixed or contaminated with non-halal products.

Therefore, it should be understood
that in the process of determining the law, a *mujtahid* does not only look at the mechanism of halal-haram alone. It requires an in-depth research such as understanding the current situation to meet the needs of it so that the issued law may achieve Maqasid Shariah. Consequently, to fulfil the provision is by applying the *siyasah syar'iyyah* method in upholding halal industry from being manipulated, that the government’s effort in introducing Halal Certification Procedure Manual can provide guidelines to responsible authorities such as JAKIM and JAIN in ensuring that non-compliant to principles of Shariah elements can be confined or minimised before awarding the halal logo to the applicant. At the same time, the industry can emphasise on other important aspects so that all halal products handling activities follow the given guidelines. One aspect highlighted in the manual is the logistics, such as responsibility and management of the logistics affairs. This aspect is considered as one of the important matter which able to reduce the risk of not complying with Shariah Law. The details that have been explained in the manual are as follow:

“5.7.3.1 The company’s management should be responsible for ensuring the implementation of halal system to ensure that the:

(i) Chairman of the Internal Halal Committee shall consist of a Muslim in the management level.

(ii) Executive of the Internal Halal Committee shall consist of a Malaysian Muslim which has the Islamic education background and Halal Executive Certificate or logistics related course certificate.

(iii) Muslim supervisor shall be permanent worker, Malaysian, competent about halal management system and working full-time in handling/processing.

(iv) Muslim worker shall be permanent worker, Malaysian, competent about halal management system and working all the time in handling/processing.

a) Applicants of multinational category shall establish:

i. Internal Halal Committee

The management shall establish an Internal Halal Committee which comprises of full-time permanent worker. Minimum members of the committee are four people comprising of:

a. Chairman
b. Halal Muslim Executive
c. Responsible officer in deciding the procurement of raw materials
d. Representative
Maslahah Approach in Halal-Logistics

from department of production

ii. Appoint a minimum of two Muslim workers.

iii. Companies shall establish Halal Assurance System. Refers to SJHM 2011 (Sistem Jaminan Halal Malaysia 2011)

b) Small Industries/Rural Industries Category and Small & Medium Enterprises (SMEs)

i. The applicant shall appoint a Muslim supervisor and minimum one Muslim worker."

(Manual Procedure of Malaysia Halal Certification, 2014)

Based on the essence of the manual, the implementation of siyasah syar’iyyah method in companies involved in the preparation of halal products have to place at least one Muslim employee in the logistics department. It is an initiative by the government to provide Muslims opportunities in logistics and give them expertise in the field. In addition, the placement of Muslim workers in these places is a form of social responsibility in meeting the clear objectives of the principles of the Shariah (Mohd Adib, Suhairimi, & Azizan, 2015). As a result, the placement of Muslim workers may become an early fortification from the mafsadah and harm to the consumers and to assure Muslim users that the products are halalan tayyiban.

Besides that, the use of maslahah helps avoid non-compliance to Shariah principles. The process of moving goods and products from one place to another requires a relatively high cost. To comply with the halal standard, in a single container, halal products must be separated from non-halal products. It results in burden to small and medium industries that want to use these services to market their products overseas. To overcome these constraints, some logistics companies provide services dedicated to Small and Medium Enterprises (SMEs). Based on the budget speech in 2014, the government has allocated RM3 billion in the form of soft loans through Bank Pembangunan Malaysia Berhad to boost the shipping and maritime activity (Abi Sofian, 2014). Accordingly, this action may indirectly increase SMEs’ business and meet the requirements of halal products around the world.

According to Philip (2013), three important components in halal logistics are warehousing, transportations, and terminal operations. It can also be viewed from two different halal logistics system approaches. Among them are as follow:

**Halal logistics in non-Muslim countries**

For halal logistics systems in non-Islamic countries, they focus on demands to avoid direct contamination between halal and non-halal products and inclusive of other risks of contamination without requiring the need of a specific warehouse or vehicles for halal products. Rationally, the flexibility is given to the first scenario because the number
of halal companies is lower than Muslim countries. Thus Philip (2013) further claims that this will create problem for the company to manage halal products because it involves a very high cost if consumers demand a specific warehouse and transportation for these products. As a result, halal products are not able to be marketed widely to Muslim consumers in non-Muslim countries if they have to strictly follow the provisions of halal logistics standard as adopted by other Muslim countries. Thus, this study further proposed by using al-masyaqah tajlibu taysir method, it helps ensure against the risk of contamination between halal and non-halal products due to container leakage and others. Consequently, Muslim consumers can access halal food and easily and safely.

**Halal logistics system from Islamic countries.** Conversely, a different approach is applied to Muslim countries which is based on separation of non-halal and halal products in the warehouse, transportation system, as well as special handling process of halal products. The number of companies involved in the food supply chain in the country is very large. Hence, maintaining the consumers’ rights is important. According to Rohana, Hadijah and Alwi (2012), Muslim consumers are willing to pay for costs associated with halal logistics to make sure that the parameters of Shariah-compliance in every aspect of the food supply chain are maintained. This shows that halal logistics policy must be adhered to so the Muslim access to halal product is guaranteed.

Furthermore, regular monitoring activities on warehouses, transportations, and terminal operations by authorities is a form of maslahah, as it can avoid risks of both direct and indirect contamination. Likewise, it can also ensure employees comply with all procedures and regulations to avoid potential contamination of halal products with non-halal ones. The monitoring and inspection at every supply chain are also important to prevent suspension or cancellation of halal certificate (Miaz & Chaudry, 2004) of the companies.

Looking at the differences in the view of scholars and ‘urf in the Islamic countries, the issue of determining various types of halal meat is a concern but the differences of legal schools (mazhab) must be respected to protect the sensitivities of all Muslims. For instance, in Brunei, slaughter can only be carried out by a conventional method, namely by hand (State Mufti of Brunei, 2000) rather than through other methods used by other Muslim countries, such as stunning which is permitted in Malaysia. Malaysia has accepted several kinds of stunning methods as long as the animal is not dead before they are slaughtered (Suhaimi, Zulaipa, & Muhammad Shahrim, 2014). Therefore, Malaysia should understand and respect Brunei laws on halal meat which has set a few regulations to be adhered to by halal meat importers.

> “Inspection by Inspection Committee
> 5. (1) The Inspection Committee shall inspect every slaughtering
centre and shall submit its report in the form set out in the Second Schedule to the Majlis accordingly.

(2) The Inspection Committee shall ensure that the slaughterers of the foreign slaughtering centres are Muslims duly authorised by the law of that country to slaughter animals according to Hukum Syara’.

(3) Whenever any halal meat is imported, the Inspection Committee shall inspect it forthwith so as to ensure that it is halal meat according to Hukum Syara’ and shall submit its report to the Board.

(4) There shall be at least two Muslim permanent workers in every slaughtering centre who shall be present at the time of the slaughtering of the animals and of the packing, lifting and transportation of the meat.”

(Laws of Brunei, Chapter 183, Halal Meat)

In practical terms halal chicken meat slaughterhouses in Malaysia must abide by the import laws of the respective country. In the case of halal meat exported to Brunei, its halal enforcement committee members will jointly monitor the early process of poultry slaughtering until the chicken meat is processed, stored and eventually sent to Brunei. This is to verify that the chicken meat supplied to Brunei is halal according to their standard. Secondly, it respects the diversity of opinions among scholars and improves diplomatic relations between the two countries.

CONCLUSION

Maslahah provides solutions to problems confronting halal logistics operations. It ensures the flexibilities of Islamic law in its application by facilitating Muslims in handling logistics issues. This can be seen by companies providing exceptions to halal logistics in non-Muslims countries for not strictly following the provisions of halal logistics standard adopted by Muslim countries. This is to ensure that halal products would be able to be marketed widely to Muslim consumers in non-Muslim countries. The practice in Muslim countries is different where a large number of companies is involved in the food supply chain, and Muslim consumers are willing to pay for costs associated with halal logistics. In short, the maslahah concept provides guidelines that should be adopted by policy makers and authorities involved in halal industries as it helps them resolve related issues and realise the higher objectives of Islamic law (Maqasid Shariah).

ACKNOWLEDGMENT

The authors would like to express gratitude to Academy of Contemporary Islamic Studies (ACIS) Universiti Teknologi Mara (UiTM) for funding the publication of this article.
REFERENCES


Nazery, K. (2009). Gearing Malaysia’s maritime sector towards making the country a global halal hub. Maritime Institute of Malaysia (pp. 1-33).


Industry Need for Educators in Shariah Compliant Financial Services

Siti Khadijah, A. M.* and Ezani, Y.
Academy of Contemporary Islamic Studies (ACIS), Universiti Teknologi MARA (UiTM), 40450 Shah Alam, Selangor, Malaysia

ABSTRACT

Shariah compliant financial service has expanded in size and geographic coverage, with its presence even in many non-Muslim countries. One of the biggest challenges facing the industry today is inadequate human capital. The demand for human resources in the industry has increased tremendously, leading to shortage of supply. Hence, there is a need for educators to develop the required human capitals to meet market demand. This study would therefore examine the competency of educators in moulding and producing high quality human capital to meet industry need. Using secondary data, the study analyses qualifications of educators as well as their academic activities to measure their competency. Findings of this study indicate that there are still rooms for improvement as far as competency of educators is concerned. It is recommended that in-house training by way of ToT (Training of Trainers) as well as exposure to industrial practice would be necessary for enhancing the competency of the educators.

Keywords: Educators, Islamic finance educators, industry need, Shariah compliant financial services

INTRODUCTION

Islamic financial services are in great demand globally in Muslim and non-Muslim countries such as Japan and Korea (Abdullah, Sidek, & Adnan, 2012). There are more than 300 Islamic financial institutions worldwide with an estimated value of about $1 trillion, which though is not half of the worth of conventional banking, the industry is growing steadily. India is following suit by having a specialised Grameen-like bank through non-banking finance company (NBFC) and non-government organisation (NGO) to cater a market of 170 million Muslims in the country (Muhammed, 2015). According to Islamic Financial Service Industry (IFSI) Stability Report 2013 (IFSI,
Islamic banking industry recorded a compound annual growth rate (CAGR) of 40.3% between 2004 and 2011 to reach US$1.1 trillion.

In Malaysia alone, when the government decided to establish the first Islamic bank in the 80s, the response from the public was overwhelming. Being a multi-racial and multi-religious country, there was a positive response from the Muslims and non-Muslims. In fact, about 50% of Islamic banks’ customers in Malaysia are non-Muslims as the country witness their growing acceptance of Islamic banking products and services (Abdullah et al., 2012). A specific study on the attitudes and perceptions towards Islamic banking among Muslims and non-Muslims in Malaysia has indicated that younger non-Muslim generations have a favourable perception of Islamic banking (Loo, 2010). Earlier, it was reported that about 70% of Bank Islam Malaysia Berhad (BIMB) corporate clients were non-Muslims (Ngui, 2004).

The progress and development of Islamic finance is remarkable. Bank Islam Malaysia Berhad (BIMB) was not the first and only Islamic financial institution. In line with the vision of former governor of Bank Negara Malaysia, Tan Sri Jaffer Hussein, to have a full-fledged Islamic financial system in Malaysia functioning side-by-side with the conventional system. The three ingredients of the system i.e. large number of players, broad variety of instruments and interbank market were soon established. A 30-year track record of Islamic finance industry indicated that Islamic banking in Malaysia is the fastest growing sector globally with an annual growth rate of 20% and in 2012, the country had 16 licensed Islamic banks and five international Islamic banks (Khiyar, 2012).

Despite the promising trend, one of the biggest challenges facing the industry is inadequate human capital. The demand for human resources in the industry surpasses supply. Islamic Finance News (IFN) reported that Malaysia needs 56,000 competent staffs for Islamic finance industry by 2020 while neighbouring Indonesia needs an additional 17,000 practitioners within the next three-years (“Human capital: what does the industry really need?”, 2015). It is also reported that the most affected sector is capital market with an identified shortage of 88%, followed by Takaful at 63% and banking at 50%. Worldwide, MIFC reported the industry needs an estimated one million professionals by 2020 to fulfil the demand of about 1.6 billion Muslims (“Developing talent in Islamic finance”, 2013). This brings into picture the role of academic institutions in developing human capital to meet market demand. Academic institutions provide quality academic programmes based on market demand, mould students and produce high quality human capital. Islamic Finance News (2015) reported a shortage of talents in Islamic finance industry and the main reason is due to it being dominated by practitioners who are trained and experienced in conventional finance industry.

In meeting the demand for sufficient human capital in Islamic financial services
industry, a large number of academic institutions and centres that provide academic programmes in Islamic economics, banking, finance and management was set up. According to Al-Zaquan (2013), Malaysia is the largest Islamic finance education centre in the world with an estimated 50 academic centres and 18 universities offering Islamic finance programmes.

However, the competency of the educators is a concern to ensure the graduates can meet exacting industry standards. It is therefore important to conduct a specific study on Islamic finance education in Malaysia.

This study focused on sufficiency of the educators and their competency in imparting knowledge to students who undertake Islamic finance programmes. The study is significant as it will identify the strengths and the weaknesses of Islamic finance education programmes as a whole. This will assist the country to build on its competitive edge in the industry and attract pool of students across the globe.

**Demand For Islamic Finance Talents**

Ever since the establishment of the first Islamic bank, efforts have been made by many agencies to educate the public on Islamic finance. Bank Islam Malaysia Berhad for example, had set up BIMB Institute of Research and Training (BIRT) in August 1995 to offer professional services to disseminate knowledge and technical know-how on Islamic banks and finance. Apart from seminars and conferences, the institute provides consultancy and advisory services to staff of financial and non-financial institutions locally and abroad.

The BIRT functions were extended with the introduction of IBFIM (Islamic Banks and Finance Institute of Malaysia) in 2001. It was designated as an industry-owned institute dedicated to producing well-trained, high competence personnel and executives with the required talent in the Islamic finance industry. The institute has two main objectives: i) to increase the pool of bankers and takaful operators who are knowledgeable and competent, where efforts are directed to promote human capital development to support the growth of the industry via establishing an industry-owned institution on Islamic banking and finance dedicated to train and supply a sufficient pool of Islamic bankers and takaful operators as required by the industry; and ii) to develop local expertise to ensure availability of a pool of skilled professionals who are well-versed in Shariah matters and are able to provide a range of relevant high quality value-added advisory and intermediation services (http://www.ibfim.com). The Institute offers three main services - talent development, One Stop Islamic Finance Reference Centre for the Islamic finance industry and Shariah business and advisory.

The Central Bank of Malaysia had set up INCEIF (International Centre for Education in Islamic Finance) in 2005 as one of many initiatives undertaken to develop and nurture talents and experts under the MIFC (Malaysia International Islamic Finance Centre). The Chairman of INCEIF is the
Governor of Bank Negara. The INCEIF has a Governing Council chaired by a Director and comprises representatives from the financial industry, regulators and members of international repute. The Senate, i.e. the Professional Development Panel is also chaired by a Director and comprises CEOs from Islamic banks and Takaful companies, regulators and representatives from the financial industry. The INCEIF offers three postgraduate programmes in Islamic finance - Masters in Islamic Finance Practice (MIFP), Master of Science in Islamic Finance (MSc) and Doctor of Philosophy in Islamic Finance (http://www.inceif.org). Currently, INCEIF’s programmes have become more popular among students from non-Muslim countries amounting to total enrolment of 14% in 2014.

To complement its mission to produce world-class talent for the global Islamic finance industry, INCEIF, as a knowledge leader in Islamic finance, offers industry-focused executive education that includes customised executive programmes. Its research unit carries out academic and commercial research which provides trend analysis, economic growth indicators and specific cross border business strategy.

In addition to INCEIF, the Central Bank of Malaysia had also established International Shariah Research Academy for Islamic Finance (ISRA) with the aim of bridging the gap between Shariah research and industry practices by conducting several courses to support the application of Shariah in Islamic banking and finance. As part of its talent development programme, ISRA offers Shariah graduates a full-time two-year programme which includes training, industry attachments and direct involvement in research projects; with the purpose of jumpstarting a career in Islamic finance. In addition, ISRA Consultancy Sdn. Bhd. (ICSB) has supported several leading IFIs by providing in-house training encompassing Shariah and regulatory issues, as well as product structuring.

The Islamic finance education and training programmes have expanded tremendously with many universities and colleges joining the bandwagon in providing related programs. Universities and colleges such as International Islamic University Malaysia (IIUM), Universiti Utara Malaysia (UUM), Universiti Teknologi MARA (UiTM), Universiti Sains Islam Malaysia (USIM), Kolej Universiti Insaniah (KUIN) and many more, are among the providers of Islamic finance talents.

Recent developments in Islamic finance suggest that the industry is gearing towards deeper and more robust growth. Nevertheless, a key challenge for the Islamic financial institutions (IFIs) is to ensure adequate human capital supply to support various functions such as Shariah expertise and product development, as well as risk management, legal and information technology.

Overall, it is expected that demand for Islamic finance talent will continue to rise, and training providers will continue to meet the challenges of supporting the unique needs of the industry (“Growing demand for talents in Islamic finance”, 2015). There
are three main factors that support the rising demand in human capital in Islamic finance, namely intense competition, evolving regulations and standards and an increasing cross-border Islamic finance activity.

The Finance Accreditation Agency (FAA) and Islamic Finance News (IFN) conducted a survey on talent development in Islamic finance in 2014. The respondents were practitioners and training providers from South East Asia, MENA, Europe, South Asia and others. Some key findings from a global survey conducted identified three key gaps in the current human capital pool - Shariah expertise, Islamic finance knowledge and product innovation (see Figure 1).

A recent study on the supply gap in Islamic finance indicated that supply has surpassed the number of jobs available as there were 9910 graduates in Muamalat and Islamic Finance (MIF) vying for 4300 jobs. Nevertheless, the excess is mainly in banking sector while talents in other areas of Islamic finance such as Islamic insurance, Islamic management, Islamic accounting and as such, are still lacking (Mohd Yusof, Maamor, & Al-Aidaros, 2016). This implies that there should be more competent Islamic finance educators to cater for the broader needs of labour market in Islamic finance industry.

The preceding discussion indicate the need for Islamic finance educators in disseminating knowledge and expertise in the respective field. Higher education institutions (HEIs) are among the main providers of future Islamic finance talents to meet industry demand. This study therefore examines the sufficiency and competency of educators at HEIs, particularly in UiTM.

METHOD AND DATA ANALYSIS
This study employed qualitative and quantitative methods where primary data were collected from interviews while secondary data were extracted from curriculum vitae (CV) of the academic staffs as at end of 2015. Data were collected from the Academy of Contemporary

![Figure 1. Human capital shortage in Islamic finance](image_url)
Islamic Studies (ACIS) of Universiti Teknologi MARA (UiTM) that provides Islamic Finance and Islamic Finance-related Programmes, namely Diploma in Muamalat and Degree in Muamalat. The CV of the educators was examined to see their educational background and their qualification while their research and publications were examined to analyse their academic activities and therefore competencies. In order to substantiate the findings of this study, interviews were conducted with the Deputy Dean (Academic) of the faculty and also a selected auditor of Malaysian Qualifications Agency (MQA).

In analysing data, the current rules and ICIFE (International Council for Islamic Finance Educators) 5 domains were used as a basis to analyse educators of IFEKSP (Islamic Finance Education and Knowledge Services Providers). The ICIFE 5 Domains are Islamic Banking and Finance, Muamalat (Shariah and Law), Islamic Economics, Islamic Accounting and Islamic Management. For the purpose of this research, IFEKSP is defined as organisations that provide one or more programmes in Islamic Economics and/or Islamic Finance.

RESULTS AND DISCUSSION
This study examines Islamic finance education provided by Higher Education Institutions (HEIs) in Malaysia. The study focused mainly on the educators and their academic activities that relate to ICIFE domains. Based on the Programme Standards set by Malaysian Qualifications Agency (MQA) (MQA Standards, 2012, p. 1), MIF covered five major areas, namely Muamalat, Islamic Economics, Islamic Finance, Islamic Management and Islamic Accounting.

Muamalat
The graduates in this area will acquire understanding, skills and expertise in shariah-based transactions according to their programme levels. They will be able to understand basic contract formations, validity and muamalat issues. Graduates at the higher levels can be shariah advisors for Islamic financial institutions.

Islamic Economics
Graduates in this field will acquire understanding, skills and expertise in Islamic economics according to their levels of study. They will acquire the ability to understand the fundamentals of conventional and Islamic economics and will be able to analyse and utilise economic theories from Islamic perspectives.

Islamic Finance
Graduates in this field will acquire an understanding, skills and expertise in an Islamic financial system according to their level of study. They will have the ability to understand basic Islamic and conventional finance and to explore advance levels of Islamic finance from the theory and practical aspects in the areas of Islamic banking, takaful, Islamic capital markets, currency markets, risk management, public finance, international financial regulations and other related areas.
Islamic Management
Graduates in this field will acquire understanding, skills and expertise in Islamic Management according to their programme levels, which encompasses general business, organisation, human resource, marketing, industrial relations, risk management and other related areas. They will have the ability to understand basic Islamic and conventional management, and will be able to analyse Islamic management and subsequently utilise management theories from Islamic perspectives.

Islamic Accounting
Graduates in this field will acquire an understanding, skills and expertise in Islamic accounting according to their programme level. It has its foundation in the field of muamalat and Islamic jurisprudence which forms the basis for accountability of organisations. It encompasses the field of shariah auditing, zakat accounting, social responsibility accounting and other related areas.

The subsequent sub-sections discuss the MIF’s educators at the institution under study.

Islamic Finance Educators
Competency of educators was measured by their educational background as well as their academic qualifications and academic activities.

Educators’ education. Table 1 displays the educators’ highest level of education in their respective field of studies. Since the faculty under study is offering Islamic contemporary studies, majority of them undertake Islamic studies during their entire academic journey.

Table 1
Educators’ highest level of education

<table>
<thead>
<tr>
<th>Highest Level of Education</th>
<th>No. of Educators</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Masters</td>
<td>17</td>
<td>60.7</td>
</tr>
<tr>
<td>Ph.D.</td>
<td>11</td>
<td>39.3</td>
</tr>
<tr>
<td></td>
<td>28</td>
<td>100</td>
</tr>
</tbody>
</table>

Of the total number of educators, the majority of them (17 or 60.7%) possess a master’s degree in their respective field of study. Among the reasons for such a significant number is because many of them are young lecturers who have served less than 5 years and yet to further their studies at Ph.D. level.

Educators’ field of studies. In determining the sufficiency of expertise to meet the requirement for finance-related programmes, the field of studies of the educators are classified based on the following: Law/Shariah, Economics/Islamic Economics, Finance/Islamic Finance, Accounting/Islamic Accounting, Marketing/Management and others.
It would be ideal for a faculty offering MIF programmes to have adequate educators with relevant qualifications. The education of the students can be at stake if the shortcoming is not tackled.

Thus, the faculty brings in experts from other faculties to teach and impart knowledge to the students. While this could be a short-term measure, necessary steps are taken in having the faculty’s own experts, such as sending the educators to further their studies in the required discipline. Grooming young lecturers under the young lecturer scheme (YLS) is also done to have future experts in the field. Perhaps, giving exposure to the existing educators in Islamic finance by sending them to industrial training would be good. Other measures would be an in-house training by conducting ToT (Training of Trainers) in MIF related courses.

As indicated in Table 2, more than half of the educators (16 out of 28 or 57.1%) have academic background other than the core discipline such as Islamic Studies (Pengajian Islam), Islamic Civilisation (Tamadun Islam), Theology (Usul-al-deen) and also Studies in Quran and Hadith (Pengajian Quran dan Hadith). Only a handful of them (4 out of 28 or 14.2%) have a background in Economics/Islamic Economics and Finance/Islamic Finance while the rest (8 out of 28 or 28.6%) have Law/Shariah background. None of the educators has Accounting/Islamic Accounting or Marketing/Management background. The finding hence indicates a shortage of human capital that have necessary qualification to teach the programmes.

The main reason for such a significant number of educators classified under others is because the programmes have only been offered quite recently. Earlier, the faculty’s main function was (and still is) servicing other faculties in teaching university’s compulsory courses (Subjek Wajib Universiti) such as TITAS (Tamadun Islam dan Tamadun Asia) as well as Ethnic Relation (Hubungan Etnik).

Educators’ academic activities. Table 3 shows the research interest as well as publications of the educators. Research activities of the educators are not considered satisfactory as there are those who have not published even a single article for the past five years. The maximum number of research ever conducted by a particular educator is 7. The average number of research being conducted by the educators for the past five years is two.

Publications by the educators could be in the form of published articles in journal or conference proceedings, chapter in book (CIB) or books. While some published a lot in the last five years (maximum of
Nevertheless, educators must equip themselves with current updates on practices in the industry especially on the use of on-line banking services (fintech). This could be done by way of having research collaboration with the Islamic financial institutions. Perhaps, having industrial training among the educators would add further value to them as they could be exposed to the real practice and experience the reality themselves.

CONCLUSION

This study examined the competency and sufficiency of Muamalat and Islamic Finance (MIF) educators at higher education institutions (HEIs) in Malaysia. The sample is Academy of Contemporary Islamic Studies (ACIS) of Universiti Teknologi MARA Selangor Campus in Shah Alam. The study employed qualitative and quantitative methods where primary data was obtained from interviews while secondary data was extracted from curriculum vitae (CV) of the academic staff. Findings of the study indicate that the institution needs to improve competency of its educators particularly in the area of finance, marketing/management and accounting. This could be done by training the educators and increasing the number of educators in the required fields. Research collaborations and sending staff for industrial training would be a good move. Future research could focus on the specific skills needed by the industry and the possibility of mismatch between the provider and the industry.

ACKNOWLEDGEMENT

The authors thank Ministry of Higher Education (MoHE) Malaysia (Project Code: 100-RMI/GOV 16/6/2 (17/2015) for funding this research.

REFERENCES


Supplier Management in Halal Food Supply Chain: A Preliminary Case Study

Tatsuya Fujiwara
Economics and Business Administration, Reitaku University, 277-0064 Chiba, Japan

ABSTRACT
Halal food supply chain is unique as it is based on Islamic teachings and hence different from other kinds of supplier management. However, research in this specific field has been scarce, particularly empirical research. Conversely, many empirical researches on conventional supply chain management have focused mainly on supply risks. Therefore, it is important to explore supplier management in halal food supply chains by applying an existing framework of supplier management from other fields. With this in mind, as a preliminary case study, this paper explores supplier management of a small and medium-sized enterprise producing halal foods in Malaysia. The main aim is to identify risk consequences, risk drivers, supply risk sources, and risk mitigating strategies for supplier management in halal food supply chains. Future research needs to include and investigate more cases in which factors such as the size of companies, the capacity and role of halal certification bodies, and the location of operation are operationalized in order to develop the framework discussed in this study.

Keywords: Halal certification, halal supply chain, risks, strategies, supplier management

INTRODUCTION
The halal food supply chain is unique as it is based on Islamic teachings (Shariah law), in which Muslims must adhere to concepts of halal (lawful or permitted) and haram (unlawful or prohibited). Compared with conventional food management systems such as Hazard Analysis and Critical Control Points (HACCP), it is obvious that there are specific requirements for halal food operations, such as no porcine materials, no alcohol and no meat not slaughtered in the Islamic way among others (Bonne & Verbeke, 2008; Lodhi, 2013; Ramalingam et al., 2013; Riaz & Chaudry, 2004). The characteristics of halal food supply chain are described in some researches (Omar & Jaafar, 2011;
Saifudin, Othman, & Elias, 2017; Tieman, 2011; Tieman, 2015; Zulfakar, Anuar, & Ab Talib, 2014). Indeed, some concepts of conventional supply chains can be seen in halal food supply chains, but the specific requirements for halal food operations still characterise halal food supply chains (Ab Talib, Hamid, & Zulfakar, 2015). Therefore, it is assumed that supplier management in halal food supply chains is different from supplier management in other supply chains.

However, empirical research into supplier management in halal food supply chains has been scarce, although there are empirical researches related to halal food supply chains such as the halal assurance system (Hassan, Arif, & Sidek, 2014, 2015), halal logistics (Ab Talib, Rubin, & Zhengyi, 2013; Tan, Razali, & Desa, 2012; Tarmizi, Kamarulzaman, Latiff, & Rahman, 2014; Tieman, van der Vorst, & Ghazali, 2012), lean halal supply chain practices (Rahman, Saibani, & Zain, 2013), halal supply chain integration (Ali, Tan, Pawar, & Makhbul, 2014), and halal traceability (Poniman, Purchase, & Sneddon, 2015). Currently, there exists only a conceptual research for supplier management in halal food supply chains (Tieman & Ghazali, 2013) despite it being an important issue. A Japanese company—Ajinomoto—suffered from recall and boycott of its halal certification food products in Indonesia in 2001 since it could not perceive the usage of porcine enzyme in its supplier’s operations as a supply risk, which adversely affected the company’s reputation (Itou, 2002).

Many empirical researches have focused on supply risks, such as the clarification of a definition of supply risk (Zsidisin, 2003a), the construction of a framework for supply risk (Jüttner, Peck, & Christopher, 2003; Peck, 2005), the development of risk management methods (Harland, Brenchley, & Walker, 2003; Micheli, Cagno, & Zorzini, 2008), the evaluation of supply risk management performance (Hoffmann, Schiele, & Krabbendam, 2013), the classification and comparison of supply risk perceptions (Zsidisin, 2003b; Zsidisin, Wagner, Melnyk, Ragatz, & Burns, 2008), the investigation of risk assessment techniques (Ganguly, 2003; Zsidisin, Ellram, Carter, & Cavinato, 2004; Zsidisin, Panelli, & Upton, 2000), and the description of supplier development (Matook, Lasch, & Tamaschke, 2009). An existing framework based on field data would help the researcher construct a framework of supplier management in halal food supply chains, which would contribute to bridging the gap between conceptual and empirical research in this field. Hence, as a preliminary attempt, this study explores supplier management of a small and medium-sized enterprise (SME) producing halal food products in Malaysia.

**METHOD**

**Framework**

This study is a case study to gain an in-depth understanding of the dynamics present within single settings (Eisenhardt, 1989). This research method is frequently used to
study supplier management (Ghadge, Dani, & Kalawsky, 2012). This study’s research method is primarily influenced by Yin (1994). Unlike Glaser and Strauss (1967) or Eisenhardt (1989), Yin’s (1994) method is premised on theories prior to collection of data.

A framework suggested by Jüttner et al. (2003) is also adopted in this study. This framework can cover risk sources in the entire supply chain risk management, but its main concern is network-related risk sources that are suboptimal interactions between organisations along the supply chain (Jüttner et al., 2003). In the further research, the network-related sources are recategorized into supply risk sources defined as ‘the uncertainty associated with supplier activities and in general supplier relationships (Jüttner, 2005, p. 122). Hence, the framework can be adapted into this study focusing on supply risks. The reason why this study adapted Jüttner et al.’s framework (2003) is because it is regarded as comprehensive and is constructed based on review of literature and interviews with managers responsible in supply chain management from various industries, including the food industry (Jüttner et al., 2003).

The framework consists of three other constructs in addition to risk sources: risk consequences, risk drivers, and risk mitigating strategies. Risk sources can be affected by risk drivers that amplify the level of risks. This then leads to risk consequences. Hence, risk mitigating strategies are considered to prevent risk consequences. That is, the propensity of risk sources and risk drivers to outweigh

![Figure 1](image_url)

*Figure 1. The basic framework of supplier management. Adapted from Jüttner et al. (2003) and Jüttner (2005)*
risk mitigating strategies causes adverse risk consequences (Jüttner et al., 2003). The risk mitigating strategies can be classified as control, avoidance, co-operation, and flexibility. Control entails controlling contingencies from risk sources. The examples include vertical integration, increased stockpiling, the use of buffer inventory, and the imposition of contractual requirements on suppliers. Avoidance is to drop specific products, suppliers, or geographical markets, if they are seen to be unreliable. Co-operation is to establish joint agreements to improve visibility and understanding of the supply chain and to share information about risks. Flexibility is to increase responsiveness by postponement, multiple sourcing, and localised sourcing (Jüttner et al., 2003). Although Jüttner et al. (2003) listed these strategies, they did not address how companies made selections from among them (Manuj & Mentzer, 2008b). The decisions of the strategies depend on the environment of companies. Figure 1 shows this framework, which forms the basis of this study.

Data Collection

The researcher investigated one SME operating in Malaysia with Malaysia halal certification (Company X). In terms of annual turnover, Company X is classified

<table>
<thead>
<tr>
<th>Categories</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Halal assurance system</td>
<td>1. What halal assurance system does your company have?</td>
</tr>
<tr>
<td>Supply risk identification</td>
<td>2. What situations does your company consider supply risks?</td>
</tr>
<tr>
<td></td>
<td>3. How does your company identify or determine supply risks?</td>
</tr>
<tr>
<td>Supply risk assessment</td>
<td>4. What assessment criteria does your company use in selecting suppliers?</td>
</tr>
<tr>
<td></td>
<td>5. How does your company determine the supplier assessment criteria?</td>
</tr>
<tr>
<td></td>
<td>6. How does your company set priorities of supply risks in assessing suppliers?</td>
</tr>
<tr>
<td></td>
<td>7. How does your company assess suppliers?</td>
</tr>
<tr>
<td></td>
<td>8. When your company procures animal-based ingredients, do the assessment criteria, the priorities of supply risks, and the assessment method change?</td>
</tr>
<tr>
<td></td>
<td>9. When your company procures ingredients from suppliers that do not have Halal certifications, do the assessment criteria, the priorities of supply risks, and the assessment method change?</td>
</tr>
<tr>
<td></td>
<td>10. When your company procures ingredients from foreign suppliers, do the assessment criteria, the priorities of supply risks, and the assessment method change?</td>
</tr>
<tr>
<td>Supply risk responses</td>
<td>11. If suppliers that your company assessed do not meet your company’s assessment criteria, does your company make efforts to improve the suppliers’ operations?</td>
</tr>
<tr>
<td></td>
<td>12. Does your company have supplier development or training programmes?</td>
</tr>
<tr>
<td></td>
<td>13. How does your company monitor suppliers or supply risks?</td>
</tr>
</tbody>
</table>
under small industries with that range from RM300,000 to RM15 million (Department of Islamic Development Malaysia, 2014). As Company X produces its final food products for consumers, it can be a focal company for supplier management in the halal food supply chain.

The researcher interviewed a corporate chief executive (Y) in Company X as the person who has authority with respect to halal food operations. For the interview, the researcher designed questions based on documents related to Malaysia halal certification (Department of Islamic Development Malaysia, 2013; Department of Islamic Development Malaysia, 2014; Department of Standards Malaysia, 2009), and from literature related to supplier management (Matook et al., 2009; Zsidisin, 2003b). Although there is a total of 13 questions, the researcher did not necessarily follow the questions in the interview, because it was a semi-structured interview to flexibly explore the contents. The researcher sent the questions to Y in advance (see Table 1). Before the interview, the researcher collected information from the website of Company X to understand its business outline.

The researcher interviewed Y for 90 minutes on May 26, 2016 for the first time. It was a semi-structured interview. This interview was recorded and the content transcribed. After the first interview, the researcher collected internal documents, such as supplier assessment criteria, and asked Y additional questions through emails. The researcher then wrote a case study report based on data analysis and sent it to Y. For the second time, the researcher interviewed Y for 60 minutes on July 24, 2016, to allow Y confirm the case study report and ask for additional questions for clarity. For the third time, the researcher interviewed Y for 30 minutes on August 6, 2016, so that Y could confirm the modified case study report.

CASE

This section discusses the supply chain chart, supply risk identification, and supply risk assessment and responses of Company X.

Supply Chain Chart

Company X procures raw plant-based ingredients from foreign countries through three trading companies that do not have Malaysia halal certification for transportation and warehousing. While Company X directly assesses and monitors the trading companies, it is difficult to assess and monitor foreign farmers that supply the raw plant-based ingredients. Therefore, it depends on the trading companies to assess and monitor the foreign farmers. According to Y, the trading companies understand halal requirements in Malaysia because they are Malaysian companies.

Company X procures processed foods from food manufacturers operating in Malaysia through two wholesalers. All the processed foods have Malaysia halal certification. Company X usually procures the same processed foods unless something unexpected happens, such as a dearth of
stocks. It does not assess and monitor the food manufacturers, partly because it procures the processed foods through the wholesalers and partly because the food manufacturers have Malaysia halal certification.

Figure 2 shows the supply chain chart of Company X.

![Supply Chain Chart of Company X](image)

**Supply Risk Identification**
Company X considers processed foods, animal-based ingredients, and logistics as supply risks.

It has tried to avoid procuring processed foods from foreign countries so that it does not encounter possibilities that processed foods contain forbidden materials as per the Islamic teachings, such as porcine materials, alcohol, and meat not slaughtered in the Islamic way. Company X can procure processed foods from foreign countries that have halal certifications recognised by the Department of Islamic Development.
Malaysia (JAKIM). But in the current situation, in which there are different halal certifications internationally (Blackler, 2015; Lever & Miele, 2012), Company X chooses to conduct self-manufacturing in its own factory to avoid processed foods from foreign countries. Even though Company X procures raw plant-based ingredients from overseas, it is not compulsory for it to have halal certifications. However, it is not always the case that Company X can conduct self-manufacturing for all processed foods. When Company X cannot conduct self-manufacturing for certain products, it procures these from food manufacturers operating in Malaysia with Malaysia halal certification. But Company X is considering whether or not to conduct self-manufacturing for an expensive processed product.

Company X considers that procuring animal-based ingredients that include meat and animal-based derivatives, such as additives, gelatine, and so on and so forth, can be a supply risks. This is because the ingredients are strongly related to the Islamic way of slaughtering, which makes processes to ensure the halalness of products complicated. That is why Company X purposely avoids the use of animal-based ingredients.

Company X also pays attention to operations in logistics for halal food products. It considers manufacturers of final food products need to manage the whole supply chain from ingredients to retailers, including logistical parts. According to Y, this ensures the company’s brand is protected and Muslim consumers have the confidence to buy its products. For this reason, Company X carefully manages logistics of raw plant-based ingredients, particularly operations of warehousing. Compared with warehousing, transportation is more controllable for Company X because delivery persons are usually the same persons.

**Supply Risk Assessment and Responses**

Company X assesses and monitors the trading companies regularly by using supplier evaluation criteria. The criteria comprise three parts. First, delivery which includes arrival of shipment on time, conforming packaging specifications, and compliance with halal requirements (e.g. halal items are not mixed with non-halal items). Second, quality. It includes quality of information, conditions of quality and quantity, the environment of warehouses, and compliance with halal requirements in warehouses. Third, service. It includes responses to emergencies and invoice accuracy. These criteria are checked on the basis of observations on sites and the number of violations of the requirements. This is conducted every six months, or when the issue occurs.

Based on the above assessment and monitoring, Y frequently makes site visits to the trading companies without notice. Y checks the quality of ingredients, tools, the monitoring, no non-halal items stored together with halal items, no animals roaming around the warehouse where they can come into contact with the materials, no animal blood on the floors, implementation
Tatsuya Fujiwara

of pest control, and recorded documents in the scene. These checks are based not only on halal requirements but also on Good Manufacturing Practice (GMP). The site visit for the trading companies is made once a month.

When it is necessary for the practices or competencies of the trading companies to improve, Company X provides the relevant advice. However, Y offers only advice, since Company X could not interfere in their businesses. If a trading company does not accept advice for crucial improvements, Company X will look for another trading company. But in most of the cases, they accept the advice.

DISCUSSION

In this section, the contents of the case are categorised into risk consequences, risks drivers, supply risk sources, and risk mitigating strategies proposed in the basic framework of supplier management.

Risk Consequences

Risk consequences can be dependent on the specific supply chain context and influences the approach to supply risks (Jüttner et al., 2003). Company X pays strong attention to compliance with halal requirements in supplier management. Otherwise, it could lead to violations of halal requirements and invalidation of the halal certification (Department of Islamic Development Malaysia, 2014). Violations of halal requirements and invalidation of the halal certification may cause recall of halal products, reputational damage, and a boycott by Muslim consumers, as the Ajinomoto issue has demonstrated. Therefore, violations of halal requirements and invalidation of the halal certification can be risk consequences for supplier management.

Risk Drivers

In general, there are several risk drivers that amplify the level of risks in conventional supply chains, such as globalisation, outsourcing, centralisation, lean processes, complex products and service, IT dependence, deficits of information, external threats, and the resources required by growing economies (Jüttner et al., 2003; Pfohl, Kohler, & Thomas, 2010). In the context of halal food supply chains, however, Islamic teachings become a crucial risk driver, which set unique requirements to ensure the halalness of food products. For example, while meat products do not increase supply risks in conventional food supply chains, they do so in halal food supply chains since the meat must not be derived from Haram animals and must come from animals slaughtered in the Islamic way (Department of Standards Malaysia, 2009). Hence, Islamic teachings have become an important and unique risk driver for supplier management in halal food supply chains.

Supply Risk Sources

The case study shows processed foods, animal-based ingredients, and logistics are supply risk sources for Company X based on the classification by Zsidisin (2003b). Zsidisin (2003b) classifies characteristics
of supply risks into three categories: Item, supplier, and market. First, the category of item can be applied to processed foods and animal-based ingredients, which means that products or ingredients themselves become supply risks. As mentioned earlier, processed foods may have forbidden materials in Islam. Also, the issue of Islamic slaughter arises when procuring animal-based ingredients. Therefore, these can cause adverse risk consequences. Second, the category of supplier is related to processed foods and logistics. This category contains supply risks related to quality (Zsidisin, 2003b). That is, it is concerned about suppliers’ competencies for quality management of their products. When suppliers produce processed foods, they need to have competencies to meet the halal requirements. In addition, in the case of logistics, it does not directly affect quality problems, but indirectly affects them in that logistics operations need to maintain the halalness and hygiene of products through transportation and warehousing. Third, the market category also influences processed foods from the perspective of the number of qualified suppliers in a market (Zsidisin, 2003b). A focal company in a halal food supply chain needs to select suppliers producing processed foods to meet halal requirements. In order to select proper suppliers, the focal company can look at the supplier’s halal certification. However, even if a supplier has halal certification, its halal certification body might not audit the supplier rigorously (Hatanaka & Busch, 2008). It has to be emphasised there are different halal certifications in the world and there might be suppliers with halal certifications that do not have enough competencies. Furthermore, in the case of Company X, it needs to choose suppliers with the Halal certifications recognised by JAKIM because of the regulation (Minister of Domestic Trade, Cooperative and Consumerism, 2011). As a result, the number of qualified suppliers in the market is limited, which makes the selection of suppliers difficult.

Risk Mitigating Strategies

Four risk mitigating strategies can be seen in the case of Company X: Malaysia halal certification, no animal-based ingredients, self-manufacturing, and continuous assessment and monitoring. These strategies can be classified into risk mitigating strategies in the framework, such as control, avoidance, and co-operation. First, Malaysia halal certification can be categorised as control strategy. As mentioned above, Jüttner et al. (2003) gives examples of the imposition of contractual requirements on suppliers as the strategy to control contingencies from risk sources. It is true that Company X does not directly audit and certify its suppliers but Malaysia halal certification can impose halal requirements on suppliers and prove the suppliers meet the requirements. As JAKIM is reliable enough for Company X, a third-party certification could work to reduce supply risks, as Tanner (2000) asserts. Second, no animal-based ingredients and self-manufacturing can be categorised into an avoidance strategy. No animal-based ingredient means simply
avoiding the ingredients, since they become supply risk sources. Self-manufacturing is adopted by Company X in global sourcing. Company X is not sufficiently confident of processed foods produced by foreign suppliers with halal certifications, since the number of qualified suppliers is limited in the market. That is why Company X conducts self-manufacturing so that it can preclude any supply risks derived from foreign suppliers. Third, continuous assessment and monitoring could be classified into a co-operation strategy. Company X conducts continuous assessment and monitoring of the trade companies when making site visits. In that process, Company X not only assesses and monitors the companies, but gives them advice to improve their operations, which implies joint agreements can be established between Company X and the trade companies. This strategy may also be regarded as a control strategy because the risk mitigating strategies suggested by Jüttner et al. (2003) are closely related to each other (Manuj & Mentzer, 2008a). The control strategy, however, is implemented in a more unilateral way. If Company X has more authority over the trade companies and rigidly imposes requirements on them, the continuous assessment and monitoring could be the control strategy, such as supplier auditing and certification (Khan & Burnes, 2007). Unlike a third-party certification, the supplier auditing and certification emphasises that a purchasing company audits and certifies suppliers to assure its standards (Smeltzer & Siferd, 1998). But its continuous assessment and monitoring would not reach the level of the supplier auditing and certification because Company X cannot intervene in the companies’ businesses to excess, as Y mentioned above.

Figure 3. The framework based on the case of Company X
Based on the framework and the discussion, this study constructs the framework for supplier management in halal food supply chains (see Figure 3).

CONCLUSION
This study identified risk consequences, risk drivers, supply risk sources, and risk mitigating strategies for supplier management in halal food supply chains, and then, constructed the framework for it. As Islamic teachings — as the specific risk driver — can amplify the level of supply risks in a halal food supply chain, Company X regarded processed foods, animal-based ingredients, and logistics as supply risk sources leading to violations of halal requirements and invalidation of the halal certification. Therefore, Company X carried out risk mitigating strategies, which were classified as control, avoidance, and co-operation strategies. It was imperative for Company X to manage supply risks not covered by the control risk mitigating strategy, which means how to manage suppliers that do not have Malaysia halal certification. As a result, Company X adopted avoidance and co-operation risk mitigating strategies, such as no animal-based ingredients, self-manufacturing, and continuous assessment and monitoring.

Future research should look at more cases and improve the framework. The researcher, however, should not select cases randomly because the case selection should be designed to compare both similar and different cases so as to clarify the conditions when a particular phenomenon is to be found or not to be found (Yin, 1994). Therefore, it would be meaningful to consider the following factors in the case selection. First, the size of companies. There is the trade-off between extra costs and the adoption of risk mitigating strategies (Jutter, 2003, 2005). But large companies tend to adopt risk mitigating strategies to improve processes of suppliers (Zsidisin & Ellram, 2003). That is why company size may influence risk mitigating strategies. Second, the ability of halal certification bodies. Latif, Mohamed, Sharifuddin, Abdullah and Ismail (2014) show that Malaysia has the strictest halal certification requirements. In addition, the halal certification system in Malaysia has become committed to urging halal control system in companies (Fischer, 2016). These can affect supplier management in halal food supply chains so that the ability of halal certification bodies may need to be taken into account to select further cases. Third, the location of the countries. When companies produce and sell halal products in Muslim countries, the companies are under more pressure than in non-Muslim countries. If some issues occur, the companies suffer from recall or boycott. Thus, the location of the countries may influence supplier management in halal food supply chains.

For these reasons, future research should investigate cases similar to that of Company X and other cases in which the above factors are operationalised in order to compare them with each other. This would
contribute to developing the framework of supplier management in halal food supply chains.

ACKNOWLEDGEMENTS

This paper is partly based on a research supported by the Kitano Foundation of Lifelong Integrated Education. The author expresses his appreciation to the foundation and the company involved in this study.

REFERENCES


Department of Islamic Development Malaysia (2013). Guidelines for halal assurance management system of Malaysia halal certification. Putrajaya: Department of Islamic Development Malaysia.


Al-Talfiq as an Innovative Solution for Primary Fiqh Issues in Halal Supply Chain Operations

Mohd Dasuqkhi Mohd Sirajuddin1*, Muhamad Rahimi Osman1, Harlina Suzana Jaafar2 and Mohd Yakub@Yusoff3

1Academy of Contemporary Islamic Studies (ACIS), Universiti Teknologi MARA (UiTM), 40450 Shah Alam, Selangor, Malaysia
2Malaysia Institute of Transport, Universiti Teknologi MARA (UiTM), 40450 Shah Alam, Selangor, Malaysia
3Academy of Islamic Studies, Universiti Malaya (UM), 50603 Kuala Lumpur, Malaysia

ABSTRACT

Managing halal products and production at a global scale is challenging, more so with the emergence of new technologies and applications. This paper investigates the innovative method of Al-Talfiq as a useful Islamic ruling tool to manage the challenges in halal industry. It focuses on Fiqh related issues within the halal supply chain (HSC) operation, and proposes Al-Talfiq as a technical tool to reduce the constraints faced by the stakeholders in this industry. Al-Talfiq is the process of fusing two opinions from different jurists of an issue that has a number of elemental connections. To achieve that objective, literature on Fiqh and halal logistics is examined to explore the applicability of Al-Talfiq in current HSC operation.

Keywords: Al-Talfiq, Fiqh, halal supply chain, jurist opinions

INTRODUCTION

Islamic rulings - Fiqh are always subject to interpretation and reinterpretations in accordance with reality, custom and circumstances (Syabir, 2007) which points to the flexibility of the Shariah known as al-murunah. Therefore, al-Syatibi (1997) emphasised the importance of easiness, innovativeness, flexibility, and practicality in issuing Islamic rulings to secure the higher objectives (maqasid) of the Shariah. In his al-Muwafaqat, he emphasises:
“The mufti is the one who provides moderate and practical solutions for the public and will not burden them with unnecessary burdens (al-shiddah) and will not also be inclined towards excessive flexibility (tarf al-inhilal)”

(Al-Syatibi, 1997, p. 276)

In the context of the halal industry, scholars have paid serious attention to the Islamic rulings regarding the technologies used in halal products and production. However, a deeper discussion on halal logistics and supply chain remains limited due to Muslim scholars’ limited exposure to the actual operations of the logistics industry. The existing practices within all of the sub-segments of the supply chain reflect an ad hoc integration of technologies, applications, and techniques with halal elements. This has led to the prevalence of the conventional approach over the Islamic ones thereby rendering the process questionable in terms of enjoying a halal status and in some cases, doubtful (syubhah) or haram. Thus, the synergic integration of both Islamic and conventional dimensions is vital.

Halal Supply Chain (HSC) in Malaysia: The Economic Perspective

According to Tieman (2011), the foundations of HSC are based on three key elements - direct contact with haram, contamination risk, and Muslim perception. He further explains that Muslim perception is always shaped by market requirements, Islamic legal schools, local fatwas and custom. The supply chain could be defined conventionally as “an integrated business process” from the suppliers through to the user, and involves orders, processing, inventory, transportation, and the combination of warehousing, materials handling, and packaging (Bowersox, David, & Cooper, 2013). The Logistics, which occurs within the broader framework of a supply chain are considered part of it and function as an administrative system to control the movement and position of raw materials, work-in-process, and the finished inventories (Bowersox et al., 2013). More specifically, the logistics function to move and position inventory with the lowest cost. When halal elements are involved, the process requires adherence to standards of halal integrity within all the management processes throughout the supply chain, from the source to the customer (Tieman, 2011). Unlike Tieman (2011), Jaafar, Endut, Faisol and Omar (2011) emphasise the term “Shariah” when defining HSC, as the term “Shariah-compliance” has been commonly used in other Islamic products and services (Omar & Jaafar, 2011). They also point out that the halal supply chain is integrative business flows and activities from the source to the point of consumption in accordance with the Shariah (Omar, Jaafar, & Osman, 2013).

Since 2009, the Department of Standards Malaysia has developed 15 halal standards of which three were dedicated to halal supply chain, and termed “Halalan Toyyiban Assurance Pipeline” (http://www.msonline.com). They are the MS2400-
Innovative Solution for Fiqh Rulings in Halal Supply Chain

1:2010, MS2400-2:2010 and the MS2400-3:2010. All of them cover the management system requirements for transportation, warehousing and retailing. In the real industrial practice, these standards are benchmarked against the third revision of Manual of Procedure for Malaysia Halal Certification (MPMHC) in 2014, which was enforced since 15 December 2015 (Jabatan Kemajuan Islam Malaysia [JAKIM], 2014). The refinement of the previous manual procedures indicates JAKIM has become more aware of the needs of stakeholders and it better understands the constraints faced by those directly involved in logistics operations. However, several foundational issues in global logistics operations, especially matters related to cost efficiency and the effects of international and local economic growth, are outstanding.

Bowersox et al. (2013) opine that the logistics industry plays a very pertinent role for global commercial growth. They argue that the logistical operations enable industrial materials and resources to be manufactured and the finished products distributed to customers. The annual expenditure of logistics operations in the United States of America in 2010 for example was approximately 8.3% of US$14.59 billion of GDP or US$1.211 trillion (Burnson, 2011). The cost of transportation in the same year was US$769 billion, which is 63.5% of the entire logistics cost. Therefore, it is clear that the logistics industry plays a significant role in the economic growth of US. In fact, Yang (2013) insists that among the procurement, manufacturing, distribution, warehousing, inventory and information systems, distribution acts as a key function of the entire logistics system where the process of distribution, i.e. transportation alone is costlier than warehousing and inventory combined.

For a developing country like Malaysia, the logistics industry needs to be competitive and sustainable. Thus, halal standards, regulations and frameworks play crucial roles to face these challenges. Although this segment of the halal industry is promising, the number of halal logistics companies in Malaysia is still inadequate (Noorliza, Asaari, Mohamad, & Kamaruddin, 2015) in view of the increasing demand for halal supply chain and logistics services. According to International Trade Administration (ITA)’s 2016 Cold Chain Top Markets Report, Malaysia ranked 25 out of 160 countries in the World Bank’s 2014 Logistics Performance Index (LPI) which represents logistics performance, such as customs, infrastructure, international shipments, competence, tracking and tracing, and timeliness (DOC, 2016). With pertinent roles played by the MS1500: 2400 in ensuring the reliability of Malaysia’s halal goods and services, the report further explains Malaysia’s logistics master plan is to focus on drastic improvements to penetrate the global market. These include strengthening institutional, technological, human resource and regulatory framework development, improving trade facilities mechanisms, developing infrastructure and freight demand, and internationalisation of logistics services. With an estimated GDP
of US$338 billion (DOC, 2016), Malaysian halal logistics industry must prepare to face these upcoming challenges. Perhaps the most significant area of focus is the Islamic rulings that will determine the laws and regulations governing halal products and operations.

The critical need is, therefore, for the halal policymakers, i.e. the Department of Islamic Development (JAKIM), State Islamic Religious Councils or the Majlis Agama Islam Negeri (MAIN), and the muftis to offer sustainable solutions for halal logistics operations to face anticipated challenges. As logistics plays a significant role in Malaysia’s halal industry and the global market, the policymakers need to address the constraints faced by the stakeholders in managing the distribution of halal goods across the globe. Therefore, Islamic rulings that regulate the industry, must, therefore, consider the economic impact, future of the halal industry, and global economic challenges.

**Halal Supply Chain Constraints: The Primary Fiqh Issues**

The conceptual development of HSC is in its early stages. The existing studies are either too focused on Islamic issues without due consideration of the nature of supply chain operations, or being too industrialised without proper consideration of the shariah perspective. Thus, it is important to understand the real constraints faced by logistics stakeholders to develop a reliable and practical conceptual framework for HSC. The three key elements in halal supply chain management as argued by Tieman (2013) have a connection with halal fiqh-based issues. The first two elements are direct contact with haram and the contamination risk, which function as “trigger elements” for the third element, namely Muslim perceptions, or the level of reliability. Irrespective of using halal products and preparations, if the process is not managed well, the product and brand will potentially be boycotted and resulting in loss of sales among Muslims. This highlights the need to scrutinise the halal supply chain operations as discussed below.

**Total Segregation and Contamination Issues.** According to Talib, Hamid and Zulfakar (2015), complete segregation between halal and non-halal goods has remained a critical success factor for halal supply chain practices to uphold its halal integrity. Besides having a dedicated warehouse and storage, dedicated transportation such as the load carrier or the transportation fleet is recommended (Jaafar et al., 2011; Tieman, Vorst, & Ghazali, 2012). Jaafar et al. (2011) believes that such an idea is unachievable in the context of supply chain operations, as supply chain operations are collaborative functions between the suppliers, manufacturers, warehouses, and retailers or industrial distributors. These four entities are the backbone of the supply chain networks of this industry. Without common adherence to halal supply chain regulations among the consigner and the consignee, once the goods are delivered, the chances of cross contamination are
very high (Jaafar et al., 2011). Moreover, Zulfa, Anuar and Talib (2014) revealed that the possibility of contamination within this kind of delivery operation is higher if the logistics company outsourced their service to the third party logistics (3PL) companies during peak delivery times. The problem becomes more complex when the halal goods that reached the retailers share the same loading bays despite being stored in a separate section in the warehouses or stores. According to Zulkifli, Jaafar and Osman (2013), contamination will normally occur during the loading and unloading process which involves personnel, material handling, and equipment, especially with regards to chilled goods. If contamination occurs, then according to the 2014 Manual Procedure for Malaysia Halal Certification (MPMHC), ritual cleansing (sertu) has to be performed.

The use of air freight on the other hand, is not only costly, but also limited by load size, weight lift capacity, and aircraft availability (Bowersox et al., 2013). Additionally, in the global supply chain practices, containers are always reused thereby entailing the possibility of having been used for non-halal goods, which always not concerned by the producers (Jaafar et al., 2011). The constraint appears when logistic equipment is subjected to “sertu” or the ritual cleansing before the halal goods are installed. Specifically, the third revision of 2014 MPMHC, JAKIM, item 6.7.3 (Transporting), section (d) insists that the transportation or container of which the halal status is doubtful must undergo “sertu” (ritual cleansing) before being used to store halal goods (JAKIM, 2014). Additionally, without proper monitoring of 3PL companies, there is the possibility the latter have transported forbidden (haram) goods before servicing the halal products and this is the most critical point that the Halal Control Point (HCP) always overlooks.

Theoretically, the raw materials providers, the producers, the wholesalers, the retailers, and all related parties have the same responsibility to uphold the halal integrity within the supply chain operations whether it involves warehousing, transportation, delivery or distribution in the retailing process. However, the idea of total segregation is still questionable when it comes to its practicality since the “nature” of supply chain operations involves a diverse range of entities in a unified supply chain network.

The Logistics Financial Issues. In terms of finance, some logistics companies respond negatively to the MPMHC guidelines regulations for the ritual cleansing of doubtful areas or things contaminated by severe (al-Mughalazah) types of impurity (najs). Talib, Rubin and Zhengyi (2013) reported that among the critical issues in logistics is the ritual cleansing (sertu). From a company’s viewpoint, it is unreasonable when they have been ordered to perform it on the sea vessels, which costs extensive manpower, time, and energy. Further, not all the logistics providers can afford dedicated halal warehouses, and some
depend on conventional logistics operations as their main source of revenue (Talib et al., 2013). Moreover, most of the respondents (companies) in this study who have between five and 25 years of experience in managing logistics services perceive halal services as costing more to meet their specific regulations which would eventually prevent companies from engaging HSC networks. Since the supply chain operations depend on an integrated network of suppliers, manufacturers, distributors, and retailers, this negative perception will expose the halal industry to the possibility of breaks in the supply chain.

MATERIALS AND METHODS

This is a qualitative study. Data concerning HSC are obtained from extensive research of online databases, theses, journals, and research reports to scrutinise the actual constraints faced by the stakeholders in the halal logistics industry. As for the solution, classical Islamic jurisprudence were referred to prove the “al-Talfiq” as a valid method in the context of developing Islamic rulings on halal issues. The Al-Talfiq’s divine validation, its importance and capabilities were obtained from classical Islamic legal literature. The review of contemporary literature, on the other hand, reveals the useful features of this method, especially studying the impact of various technologies and applications on HSC. Both classical and contemporary literature offer insight on how to apply the Islamic rulings (hukm) for current technologies and HSC operations. The primary issues related to HSC were then analysed in the context of Islamic rulings to scrutinise their characteristics and propose a suitable solution for the current constraints facing the industry.

RESULTS AND DISCUSSION

Islam is a progressive religion and its law emphasises sustainability, flexibility, and adaptability. To achieve these notions in the context of supply chain and logistics management, there are legal tools to facilitate this. Al-Talfiq is one such tool, where the process of “merging of the opinions of several schools of law (madhhab) into one conclusive issue” (Khan, 2013) is employed. This section briefly discusses the foundations of this method, its technical definition, the notion of al-Talfiq from the Qur’anic and prophetic perspective, and its practicality.

Al-Talfiq in Islamic Jurisprudence: A Solution for Halal Supply Chain Constraints

Al-Talfiq is from the root word “la-fa-qa” or “la-fi-qa” which according to Ibn Manzur (n.d, p. 4056) means “to join the separated” or “to forge” (Al-Razi, 1999, p. 283). It also means “to accept and hold” (Unays, Muntasar, Sawalihi, & Ahmad, 2004, p. 870). These two meanings imply combining, patching, merging and joining the separated to attain unification and harmony in legal rules for greater applicability in any given circumstance. In terms of its practicality, al-Albani (1997) describes al-Talfiq as:

“To employ the solution which not been held by any Mujtahid
Innovative Solution for Fiqh Rulings in Halal Supply Chain

(absolute jurist) by adhering one after another (yatarattab al-a’mal) to a number of views from different schools (taqlid al-madhahib). It means to hold - within one issue - which has a few basic elements - on two views or more” (p. 183)

In other words, the condition occurs by fusing or merging two opinions of different jurists that are interconnected (Al-Zuhaili, 1986). He gives the example of one adhering to al-Syafi’ee’s view on taking ablution for wiping a part of the head and then adhering to Abu Hanifa’s view on its validity even after having touched a woman (Al-Zuhaili, 1986). The same ablution is then used to perform prayers. Al-Syafi’ee considered touching a foreign (non-mahram) woman as invalidating one’s ablution while Abu Hanifah considered washing less than a quarter of the head as an invalid ablution (Al-Zuhaili, 1986). This simple case of al-Talfiq shows the act of fusing or combining two different schools of thoughts i.e. al-Syafie and al-Hanafi on a single ibadah.

The Qur’anic and Prophetic Notion of al-Talfiq

Since al-Talfiq did not exist in the early generations of Muslim scholars, it does not mean it is without precedent. Due to the various and numerous modern industrial constraints brought about by new technologies, systems, and applications, this principle has become vital, especially in the context of preserving the religious influence in the face of new technologies and systems. In this sense, there are, therefore, a few principles and theories in Islamic jurisprudence, which establish the validity of this method. They are as listed below:

The Principle of al-Yusr. The words of Allah in chapter 2 verse 185 describe how the obligation of fasting in Ramadan has been simplified for the sick [marid] and the travellers [musafir] to observe when they are able to (Al-Tabari, n.d). In the same verse, Allah SWT explains “…Allah intends for you ease, and He does not want to make things difficult for you…” (Al-Qur’an, 2:185). The notion of ease in this verse is clear, where Allah SWT has permitted those who are facing the constraints of travelling (al-Safr) or sickness (al-Mard) to fast when the hardship (al-Masyaq) is over. It proves the principle of ease in Islamic law when Allah SWT Himself declared in the same verse that the objective of this flexibility is to ease the adherence to Islamic injunctions. In support of this, the Prophet Muhammad PBUH said:

“Whenver Allah’s Messenger PBUH was given the choice of one of two matters, he would choose the easier of the two, as long as it was not sinful to do so, but if it was sinful to do so, he would not approach it. Allah’s Messenger PBUH never took revenge (over anybody) for his own sake but (he did) only when Allah’s Legal Bindings were outraged in which case he would take revenge for Allah’s Sake” (Narrated by Al-Bukhari, 2001,
Kitab al-Hudud, Bab: Iqamah
al-Hudud Wa al-Intiqam li Hurumatillah, no. 6433)

The Principle of al-Maslahah. The verse: “...and He (Allah) does not make for you –in religion- any hardship” (al-Qur’an, 22:78). As an important characteristic of Islamic law is practicality, it considers the public interest known as maslahah. The term “maslahah” denotes the utmost righteousness and goodness (salah), which normally entails benefits (al-naf`). It refers to anything that produces a benefit at the collective or individual levels (El-Mesawi, 2006). The concept of public interest (maslahah ‘ammah) consists of what is useful and beneficial for the entire community (ummah), such as safeguarding the economic growth and providing national security and education as long as they are in line with the spirit of the Shariah. Some scholars regard al-Maslahah as a common principle of Islamic legislation along with the principal of “absence of hardship” (‘adam al-masyaqqah) and the “realisation of justice” (tahqiq al-’adalah) and some add the “removal of hardship” (raf` al-haraj) and “prevention of harm” (daf` al-darar) as integral to al-maslahah (Kamali, 2006). To achieve this principle in the process of law making, al-Talfiq could be a useful method to facilitate the process of choosing rulings from different Islamic schools of thought while maslahah functions as a universal principle to guide its contextualisation to suit the circumstances.

The Principle of al-Murunah. Al-Murunah literally translated as flexibility or elasticity, is a feature of the Shariah that renders it sustainable and relevant to cultural and scientific developments across time and place. Al-Qaradawi (2005/2013) elaborated five factors that form this characteristic with instances from the traditions of the Prophet Muhammad PBUH, the companions and some of the prominent Muslims scholars in dealing with the divine texts. The five factors are the ampleness of intentional omission of certain matters, the concern of the texts to the universal rulings, the capability of the texts for being comprehended differently, considering necessities, excuses, and exceptional circumstances, and the alteration of fatwas due to changes of time, place, and situation. Therefore, in the context of developing Shariah rulings (hukm), the employment of al-Talfiq also signifies murunah in Islamic rulings. It assists the policymakers to choose any view from different schools to resolve contemporary challenges and preserve the influence of religion any industrial segments.

The Validity of al-Talfiq in Islamic Jurisprudence

Al-Zuhaili is one of the most well-known contemporary Muslim scholars who proposed a moderate view regarding al-Talfiq, especially to face contemporary challenges. However, there are still a few restrictions while employing this method. Al-Zuhaili (1986) stresses that according to the classical fiqh literature, al-Talfiq is invalid to be used in relation to fundamentals of Islam.
Innovative Solution for Fiqh Rulings in Halal Supply Chain

In the context of HSC, the management of goods, its logistics, freight movements, and contamination fall under this third type of Islamic ruling. In modern practices, managing halal goods at the international level requires such an approach to support and advance the influence of Islamic services over the conventional one. The current global halal market and its production, which comprise logistics and supply chain, has indicated the urgent need for al-Talfiq to play its role as long as it does not violate the objective (maqasid) of the Shariah.

SOLUTION

Based on the foregoing, this section proposes a solution based on the idea of al-Talfiq to reduce the constraints within the halal supply chain operations. The issue is the impurity (al-Najasah) or the degree of hygiene of related equipment involved in supply chain and logistics operations. Al-Talfiq can be very useful here as a substitution of MPMHC requirements for ritual cleansing where a few major Islamic legal schools permit not performing the “sertu” even for major impurities (al-najs al-Mughallazah). According to Al-Zuhaili (1985, p. 153), the al-Maliki school are moderate in their approach to cleansing the al-Mughallazah type of impurity and consider using normal water without soil sufficient. In other words, there is no sertu cleansing for the impurity caused by swine and canines and their derivatives. Al-Zuhaili (1985) further said that in the Hanafi and Maliki school of thoughts, canines are considered clean and the impurity part is...
licking, or anything that has direct contact with its saliva. Nevertheless, all of the four eminent schools are in consensus that the swine and canines are impure (najis), and only differ in terms of the method of cleansing. Al-Nawawi concludes in “al-Majmu” (1980) that in this case, the cleansing from this kind of al-Najs (swine) is to wash once without soil. He emphasises that this is the majority view of the scholars that admits the impurity of swine [najasah al-Khinzir] and its derivatives (Al-Nawawi, 1980). Even though al-Imam al-Syafi’i has two opinions regarding this issue, the selected opinion according to Al-Nawawi (1980), is as mentioned and is based on a strong argument that the “seven-washes” with soil are textually proven only in the case of contamination from canine saliva (Al-Nawawi, 1980). Here, al-Talfiq offers the method of switching, combining, and merging the views of various schools of laws or within the same school.

As a conclusion, in the context of halal logistics operations, the obligation of performing the “ritual cleansing” (sertu) for the doubtful container or equipment is an established practice in classical fiqh literature. However, there are legal views from other schools including within the al-Syafi’e school that permits not performing the ritual cleansing [sertu] for the case of impurity caused by swine. In this case, Muslims can amalgamate the legal opinions using al-Talfiq. Knowing that there is a strong opinion from one of the great scholars of Islam, this idea should therefore, be discussed more seriously as an alternative for the stakeholders to uphold it as a guideline. It helps resolves constraints in manpower, finance, time, energy and effort, and such flexibility is urgent in supply chain operations at the international scale which involves a huge logistics equipment, transportation, warehouses, ports, and terminals.

CONCLUSION
This study has addressed several pertinent issues related to HSC. First, the use of al-Talfiq needs to be monitored by experts so that it will not be misused and lead to an atmosphere of unrestricted permissibility (tatabbu’ al-Rukhas) which implies the act of choosing the most lenient views. Second, there is a need for critical study of international halal supply chain management to identify the actual constraints faced by stakeholders. Third, the scope of contamination needs to be defined precisely and consideration of the proposed solution for the procedure of ritual cleansing (sertu) and the use of proper packaging solutions for the unavoidable critical points along the supply chains. As the halal industry supports significant global economic growth, it has led to positive changes in the reliability of its delivery system. There is increased awareness of the importance of HSC and given new challenges and constraints, the employment of normal and customary rulings on the new circumstances seem inappropriate. Being confined to one particular school of thought (madhhab) for the international-scale operations will result in other hardships. Therefore, an
innovative method such as al-Talīfīq for selecting Islamic rulings seems to be a practical approach to reduce hardships and resolve challenges in the halal industry and strengthen its global networks.

ACKNOWLEDGEMENT

The authors thank the funders of this research, namely the Malaysia Institute of Transportation (MITRANS), Universiti Teknologi MARA (UiTM), and Ministry of Education.

REFERENCES


Mohd Dasuqkhi Mohd Sirajuddin, Muhamad Rahimi Osman, Harlina Suzana Jaafar and Mohd Yakub@Yusoff


Halal Culinary Tracking Application at Food Souvenirs Center Based on Analytical Hierarchy Process (AHP) Method

Sucipto Sucipto1,2, Mas’ud Effendi1, Mochamad Ulul Khilmi1, Muhammad Arif Kamal1, Aryo Pinandito3 and Herman Tolle3

1Department of Agroindustrial Technology, Faculty of Agricultural Technology, University of Brawijaya, Malang, 65145 Jawa Timur, Indonesia
2Halal Qualified Industry Development (Hal-Q ID), University of Brawijaya, Malang, 65145 Jawa Timur, Indonesia
3Informatics Department, Faculty of Computer Science, University of Brawijaya, Malang, 65145 Jawa Timur, Indonesia

ABSTRACT
The food souvenir industry is important for tourism at Malang City. This city has become a famous tourism destination over the years which is well-known for its snacks and beverages, such as fruit chips, fruit juices and dairy products. However, information on their products for halal status is limited. On the other hand, the number of tourists who care about halal products is increasing. Therefore, this study has developed a halal culinary tracking (HCT) application to facilitate the search for halal certified souvenir products. The priority factor and the best strategy for its application are investigated. An analytical hierarchy process (AHP) was conducted to analyse content, design, organisation, user-friendly and accessibility of the HCT. The results showed that user-friendly attribute has the highest point (0.423). This attribute became priority in the development of HCT application, because with the easiest operation and appropriate information, the application will be more acceptable for users. The alternative strategy having the highest point was easy to access (0.249). Easy accesses to an application will have a positive impact on its usage.

Keywords: Analytical hierarchy process, ease of access, food souvenir, halal culinary tracking, tourism

INTRODUCTION
In recent years, food souvenirs have become a craze in tourist destinations. Malang is a tourist destination which is famous for its chips. However, many of the food souvenirs sold there do not have halal certifications.
whereas most Muslim tourists demand halal products. According to Marzuki, Hall and Ballantine (2012) Muslims must only eat halal food and abstain from prohibited food (haram). Halal food is permissible food that can be consumed with no doubt by Muslims in accordance with Islamic law (Samori, Ishak, & Kassan, 2014). According to Henderson (2016), and Bonne and Verbeke (2008) halal food is food that is permissible and may be obtained by way of purchase using halal earnings. Halal accreditation is considered as the benchmark for food safety, quality assurance and has many benefits both for Muslims and non-Muslim consumers (Baharuddin, Kassim, Nordin, & Buyong, 2015). Food is an important part of tourism industry with more than 25% of total tourism expenditures (Ardabili, Rasouli, Daryani, Molaie, & Sharegi, 2011). Many food souvenirs do not have halal certification, thus, consumers face difficulty in choosing products with halal certification. This is due to lack of awareness among food manufacturers and producers on the importance of halal certification.

Recently, the Assessment Institute for Food, Drugs and Cosmetics, the Indonesian Council of Ulama (LPPOM-MUI), proposed an instrument to find halal products by scanning barcodes found in product packaging. Additionally, the development of information communication technology, especially mobile applications, enable customers to the information needed. One of the mobile applications which are often used by users is any application related to information on travel and culinary, and can be downloaded using Play Store, App Store and Windows Phone App. These applications include information on culinary tourism destinations in Indonesia. However, majority of these applications do not display the travel and culinary destinations that have been halal certified, especially for Indonesia. The only halal certification body in Indonesia is LPPOM MUI.

This research developed an android based mobile application which does not only provide information on tourist destinations and culinary, but also information about halal food. This application is called Halal culinary tracking (HCT) and evaluated using Analytical Hierarchy Proses (AHP) based on the Technology Acceptance Model (TAM). TAM method can explain the major factors that influence the individuals to accept a technology (Serenko & Bontis, 2004). This technology acceptance is determined by an individual’s behaviour against use of technology (Kulviwat, Bruner II, Kumar, Nasco, & Clark, 2007). Perceived motivation by users to try the new technology can be explained by two variables, namely ease of use and usefulness (Davis, 1989). On the other hand, the AHP method was used to improve business performance (Cheng, Li, & Ho, 2002), evaluation of CMMS software (Braglia, Carmignani, Frosolini, & Grassi, 2006), and digital library with ease of use; good interface was the critical point for improvement of this software (Lai, Chiu, Huang, Chen, & Huang, 2014).

The HCT application was developed to find halal certified products as an alternative to barcode scanning and SMS notifications.
Tracking refers to the ability for tracking food and food ingredients throughout production chain. Tracking can be used to find and recall products that might present a serious risk to consumer health (Zailani, Arrifin, Wahid, Othman, & Fernando, 2010). Sucipto et al. (2017) evaluated acceptance of HCT application among sharia hotels and halal restaurants.

In the present study, the AHP method based on expert judgment on HCT application was adopted. Expert judgment is required to provide an assessment of several key factors and alternative development strategies to subscribe to mobile applications. The AHP method was selected due to its ability to break down a complex problem become easier to understand (Sipahi & Timor, 2010). A uniform test was applied where weights of each level are calculated against the total goal, and decisions are made based on calculation of results through a combination of different evaluation models (Saaty, 2008). According to Gass and Rapcsák (2004), AHP was used to solve complex problem that can be decomposed in a hierarchical structure, where each of the levels is divided into specific elements. The main objective has been given top priority; the criteria, attributes, sub-attributes and the decision alternative are listed in descending order of the hierarchy. Based on the AHP method, the present study is aimed at obtaining the priority factors and the best alternative to develop HCT application through experts’ judgment.

METHODS

Time and Place of Research

This research adopted a survey method and interviews were conducted among tourism officials, cooperatives and small and medium enterprises (SMEs), public health officials in Malang, East Java, Indonesia on September 2015 to January 2016. Data was processed at Laboratory of Computational and Systems Analysis, Department of Agro-industrial Technology, Faculty of Agricultural Technology, Brawijaya University.

Scope of Problem

This research focused on SMEs who promote food souvenirs in Malang and developed HCT to improve tracking of halal food souvenirs SMEs there.

Identification of Factors and Alternative Strategies

Identification of factors are important to determine the effect of alternative strategies. Structural diagram mapping was used to outline the factors and to explain the AHP linkage between factors and alternative strategies. The factors and alternative strategies were developed based on the various problem that occurred in the development of HCT application in food sector SMEs based on TAM method (see Table 1).

Determining Respondents

Respondents of this study were selected using invitation judgment sampling, a technique
based on the criteria of researchers. The five respondents of this research were experts from Tourism Officials, Cooperatives and SME Official, Public Health Official in Malang, East Java, Indonesia and the chairman of group SMEs of Malang.

**Designing Questionnaire**

The questionnaire was designed to assess weight of criteria that influence the development and then analysed using AHP. Each criterion was weighted using pair wise comparison scale as in Table 2.

### Analytical Hierarchy Process (AHP) Method

This section looks at the priority level of alternatives of HCT application based on AHP method using Criteria Decision Plus software. Random index value varies in accordance with the matrix order as shown in Table 3.

Value of consistency ratio (CR) which is smaller than or equal to 0.1 has a good level of consistency and accountability (Saaty, 1983). The CR value is a measurement of

---

**Table 1**

<table>
<thead>
<tr>
<th>Factors</th>
<th>Alternative Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content</td>
<td>• Displaying products price</td>
</tr>
<tr>
<td>Design</td>
<td>• Displaying product images</td>
</tr>
<tr>
<td>Organisation</td>
<td>• Provide a column of expired products</td>
</tr>
<tr>
<td>User-friendly</td>
<td>• Navigation of the site</td>
</tr>
<tr>
<td>Accessibility</td>
<td>• Add two features language</td>
</tr>
<tr>
<td></td>
<td>• Ease of access</td>
</tr>
<tr>
<td></td>
<td>• Add field ratings and use reviews</td>
</tr>
</tbody>
</table>

**Table 2**

<table>
<thead>
<tr>
<th>Score</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Alternative A as important as Alternative B</td>
</tr>
<tr>
<td>3</td>
<td>A is a little more important than B</td>
</tr>
<tr>
<td>5</td>
<td>A is clearly more important than B</td>
</tr>
<tr>
<td>7</td>
<td>A is very obviously more important than B</td>
</tr>
<tr>
<td>9</td>
<td>A is absolutely more important than B</td>
</tr>
<tr>
<td>2,4,6,8</td>
<td>When hesitating between two adjacent values</td>
</tr>
</tbody>
</table>

*Source: Bayazit (2006)*

**Table 3**

<table>
<thead>
<tr>
<th>Matrix order</th>
<th>Random index Matrix (RI)</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Random index</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0.58</td>
<td>0.90</td>
<td>1.12</td>
<td>1.24</td>
<td>1.32</td>
<td>1.41</td>
<td>1.45</td>
<td>1.49</td>
</tr>
</tbody>
</table>

*Source: Saaty (1983)*
RESULTS AND DISCUSSION

Overview HCT Application

The HCT application is designed to allow Muslims to access halal food, particularly in tourism destinations. The application is based on tracking or showing the location of tourism destinations. The information provided is related to food souvenirs, restaurants, caterings, hotels, mosques, and tourism attractions that educate society. It contains brief information and review of the product, store opening time, address, phone number, price, image, location, and number of halal product certification.

Figure 1 and Figure 2 show samples of city, object selection, tracking from user location to object in maps display.

The HCT application has Google map services that is directly connected to the application when the user selects the object destination. Google map helps users to find...
the object destination while travelling to tourist destinations. The map icons help users to find their desired locations.

Malang City Profile

Malang is the second largest city in East Java, after Surabaya. It is located about 83 km from Surabaya with a height of 440-667 meters above sea surface. Malang was known as the Paris of Java during Dutch colonial era. It has a tropical climate, and there are 2 seasons - with an average temperature of 22.7-25.1°C and a maximum temperature of 32.7°C. The weather is generally cooler compared with other metropolis, and the people are hospitable (Anonymous, 2016).

Malang offers nature and shopping tours, handicraft, cultural, culinary and food souvenirs. Food souvenirs in Malang are strong attraction and there is a famous centre for food souvenirs. Travellers can choose from a variety of food souvenirs, especially tempe chips and fruit chips (Anonymous, 2016).

Halal Food Souvenir Industries in Malang

Malang has natural resources to support the agroindustry. The famous ones include tempe and tempe chips, processed mushrooms, processed fruits and processed milk. Halal certified food souvenir in Malang is still limited. This could be due to the lack of awareness among business managers and producers on halal certification. Today, halal food is very important because majority (80%) of Indonesians are Muslims. Halal food refers to Islamic methods of sourcing and preparing food of animal origins. Therefore, halal material certification and production are important for Muslims. Due to globalisation, processed foods are imported from abroad and thus, halal certification of various materials and processed products is managed by LPPOM-MUI, established 23 years ago. Regional MUI of Malang provides halal promise certificate based on producer commitment to produce halal product through a restricted assessment. Table 4 and Table 5 show samples of halal food souvenirs certificate from LPPOM MUI and halal food souvenirs promise certificate from Regional MUI of Malang.

It is evident from the information above halal certification is still limited. On the other hand, there are numerous products that have acquired halal promise certificate, but which are sufficient to guarantee their halal status. LPPOM MUI halal certification conducts detail audit using Halal Assurance System (HAS) series. Products are also tested in the laboratory if required. On the other hand, the halal promise certificate was based on the recognition of producers without detailed audit. Thus, halal promise certificate is cheaper than halal certificates from LPPOM MUI.

Strategies Priority Identification of HCT Application Development with AHP Method

The strategic priority determination of HCT application development in Malang was conducted using AHP. The results are based
Halal Culinary Tracking at Food Souvenir Centres

on questionnaire, and Criterion Decision Plus Software obtained consistency ratio (CR) and the weight of each factor and alternative strategy. Respondents rated consistently if the CR is smaller than or close to 0.10. If the CR is of more than 0.10, then the respondents with less consistency should be ‘repaired’. According to Saaty (2008), logical consistency in AHP is a rational principle which means that the thought or similar objects are grouped in accordance with their homogeneity and relevance as well as the relationships between objects based on specific criteria justifying each other logically. The CR values of respondents are shown in Table 6. Consistency ratio value of each level is less than 0.1, so each level is consistent and should not be replaced.

Table 4
Samples of food souvenirs that acquired halal certificate from LPPOM MUI in Malang

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Address</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ailani Shredded Mushroom</td>
<td>Andromeda Street No. 5 Malang</td>
<td>Shredded Mushroom</td>
</tr>
<tr>
<td>2</td>
<td>Arena food</td>
<td>Kawi Atas Street 43 C Malang</td>
<td>Various Chips</td>
</tr>
<tr>
<td>3</td>
<td>Camilan 99</td>
<td>Lekso Street 20, Malang</td>
<td>Various Chips</td>
</tr>
<tr>
<td>4</td>
<td>“Sahabat” Processed Catfish</td>
<td>Klayatan Street Gang 2 No. 18 Malang</td>
<td>Processed Catfish</td>
</tr>
<tr>
<td>5</td>
<td>Pao Telo</td>
<td>Terusan Borobudur Street 80</td>
<td>Pao Telo</td>
</tr>
<tr>
<td>6</td>
<td>Star Candy Lollipop</td>
<td>Bandulan Street Gang 4 Malang</td>
<td>Lollipop Candy</td>
</tr>
</tbody>
</table>

Table 5
Samples of food souvenirs that acquired “halal promise certificate” from LPPOM MUI in Malang

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Address</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bawang Jaya Makmur</td>
<td>Tumenggung Suryo Street 24 A Malang</td>
<td>Various Chips</td>
</tr>
<tr>
<td>2</td>
<td>Bu Noer</td>
<td>Ciliwung Street 2 Malang</td>
<td>Various Chips</td>
</tr>
<tr>
<td>3</td>
<td>Burung Swari</td>
<td>Tumenggung Suryo Street, Sanan Shop 86</td>
<td>Various Chips</td>
</tr>
<tr>
<td>4</td>
<td>Caprina</td>
<td>Tlogomas Street No. 45</td>
<td>Various Chips</td>
</tr>
<tr>
<td>5</td>
<td>Cak To Meatball Chips</td>
<td>Bogor Street No. 1 Malang</td>
<td>Meatball Chips</td>
</tr>
<tr>
<td>6</td>
<td>Padjiro Chicken Shredded</td>
<td>Hamid Rusdi Street Gang V No. 413 Malang</td>
<td>Chicken Shredded</td>
</tr>
<tr>
<td>7</td>
<td>Kotak Ketjil</td>
<td>Bendungan Jati Luhur Street 38 Malang</td>
<td>Fresh Snack</td>
</tr>
<tr>
<td>8</td>
<td>Kentang Chips</td>
<td>Raya Bukit Berbungunan Street 55</td>
<td>Special Snack</td>
</tr>
<tr>
<td>9</td>
<td>Kue Gaya Baru</td>
<td>Soekarno Hatta Street D-508 Kav 2</td>
<td>Bread and Cake</td>
</tr>
<tr>
<td>10</td>
<td>Ledre Pisang Bangka</td>
<td>Bangka Street 35 Malang</td>
<td>Banana Ledre</td>
</tr>
<tr>
<td>11</td>
<td>Murni Sari</td>
<td>Soekarno Hatta Street Malang (in front of the fuel station)</td>
<td>Special Snack</td>
</tr>
<tr>
<td>12</td>
<td>Pie Apel Malang</td>
<td>Tumenggung Suryo Street No. 908 Malang</td>
<td>Apple Pie</td>
</tr>
<tr>
<td>13</td>
<td>Pia Mangkok</td>
<td>Soekarno Hatta Street PTP II No. 1</td>
<td>Bakpia</td>
</tr>
<tr>
<td>14</td>
<td>Pie Apel</td>
<td>R. Tumenggung Suryo Street No. 90 B</td>
<td>Apple Pie</td>
</tr>
<tr>
<td>15</td>
<td>Rahayu</td>
<td>R. Tumenggung Suryo Street No. 31</td>
<td>Various Chips</td>
</tr>
<tr>
<td>16</td>
<td>Sanan Intan Jaya</td>
<td>Tumenggung Suryo Street 81 A Malang</td>
<td>Various Snack</td>
</tr>
</tbody>
</table>
Priority Development of Halal Culinary Tracking Application

Based on the assessment obtained at criteria level 1 (factor), the development of HCT application is shown in Table 7. The priority factors of HCT application are user-friendly (0.423), accessibility (0.156), content and organisation (0.142), and design (0.135). User-friendly is the first priority in strategic development of HCT application. Applications which are easy to operate and give clear and relevant information are preferred by users.

The main issue in developing an interactive mobile application is its usability. The principles of usability are measured in three common attributes; effectiveness, efficiency and satisfaction. Other attributes, such as cognitive load, tend to be overlooked in the usability models that are most prominent despite their likely impact on the success or failure of an application (Harrison, Flood, & Duce, 2013). People at the centre of mobile application development (PACMAD) identify three factors which can affect the overall usability of a mobile application: User, Task and Context of use.

Mobile application based on user interface (UI) should consider the content design and organisation in order to support the usability of the application. The overall design of mobile application will affect how the user will interact with the technology (Harrison et al., 2013). Thus, mobile user interface should consider the application content such as effectiveness of user functions, consistency related to user interface and interaction method, information related to clear and concise understanding and efficiency that allow users to perform quick function. The organisation attribute should consider directness related to user feeling to direct manipulation,
simplicity that allows user to intuitively understand and recognise the functional task and learnability related to easy applicability. The last, feature design, should consider familiarity of product display and minimise user effort in executing tasks (Park, Han, Kang, Park, & Chun, 2011).

Table 7
Priority factor of HCT application development

<table>
<thead>
<tr>
<th>No.</th>
<th>Criteria Level</th>
<th>Priority Vector</th>
<th>Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>User-friendly</td>
<td>0.423</td>
<td>1*</td>
</tr>
<tr>
<td>2</td>
<td>Accessibility</td>
<td>0.156</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>Content</td>
<td>0.142</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>Organisation</td>
<td>0.142</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>Design</td>
<td>0.135</td>
<td>5</td>
</tr>
</tbody>
</table>

User-friendly is related to ease of use of application. Users that find it easy to use and operate application would use this program as reference to buy food souvenirs in tourism destinations. An interactive application can allow for easy reference and operation (Kwon, Bae, & Blum, 2013; Park et al., 2011). Another definition describes ease of use as the degree that people believe using a new technology will reduce their efforts (Davis, 1989). According to Venkatesh and Bala (2008), the six determinants of ease of use were: new technology self-efficacy, external control, objective usability, computer playfulness, perceived enjoyment, and computer anxiety. Self-efficacy relates to personal beliefs and whether a person has the ability to use a new system. Perceived enjoyment explains that the activity of a new technology is perceived to be enjoyable. Computer anxiety describes the fear people experience.

Mobile internet technology increasingly facilitates access and flexible. For example, technology users easily perform financial transactions, ordering goods and services on time, as well as other activities (Wang & Wang, 2010). Technology users also could encourage the development of mobile technology for non-profit organisations, or to build profit-oriented applications to reach potential consumers (Kwon et al., 2013).

Priority Alternative Strategies of HCT Application Development

Seven alternative strategies development of HCT application are shown in Table 8. Expert respondents (0.249) suggest ease to access of mobile application, namely user flexibility to get information from anywhere and any place or devices (Wang & Wang, 2010) as the main advantage. The next strategic priority is site navigation (0.188). Site navigation allows users to easily move from one attribute to the other within an application (Zhao & Dholakia, 2009). The third priority related to strategic alternative is ratings columns and user reviews (0.122). This alternative strategy allows users to recognise and memorise then enhance the information on halal culinary destination (Park et al., 2011). The fourth strategic alternative shows image product attribute (0.114). This allows user to get more detailed information on product attribute. This attribute also allows the other stakeholder (SMEs’) to promote their products and services. The last two attributes, language feature and displays product prices (0.110), and expiration (0.107) are considered as
additional information. Figure 3 shows strategy development hierarchy of HCT Application.

Based on Table 8, the highest priority of alternative strategy was easy of access, which is very important as a goal to make the application user friendly. This application is designed in a certain way so that all users have equal access to information and functions (Manasra, Zaid, & Taher Qutaishat, 2013).

Table 8
Priority strategic alternatives of HCT application development

<table>
<thead>
<tr>
<th>No.</th>
<th>Criteria Level 1</th>
<th>Priority Vector</th>
<th>Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Easy to Access</td>
<td>0.249</td>
<td>1*</td>
</tr>
<tr>
<td>2</td>
<td>Site Navigation</td>
<td>0.188</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>Ratings Columns and User Reviews</td>
<td>0.122</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>Show Images Product (Product Image Layout)</td>
<td>0.114</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>Two Language Features</td>
<td>0.110</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>Product Prices</td>
<td>0.110</td>
<td>5</td>
</tr>
<tr>
<td>7</td>
<td>Expiration</td>
<td>0.107</td>
<td>6</td>
</tr>
</tbody>
</table>

Acceptance and Improvement of HCT Application

The aims of HCT application are to provide halal information, market place promotion of SMEs and to ensure it is more convenient and practical for people to get halal products. The most expected outcome of the application is its user acceptance. Based on the five factors analysed, these expert respondents chose the ease of access as the most important factor. Application must be easy to access and easy to use. Perceived ease of use positively affects the perception of the usefulness of an application (Kwon et al., 2013). Display features of HCT application need to be repaired to give the user’s convenience. Information updates are needed periodically in order to provide accurate information. In addition to ease of access, expert respondents also highlighted accessibility, for example Play Store as distribution channel.

Expert respondents expect this application to become the people’s choice so that domestic and foreign tourists can obtain information on halal products. It has implications for businesses to deliver information on their products to the general public. This application is expected to be introduced and launched as soon as possible, so it provides information to the public and provides benefits for business owners.

There are expert respondents who provided feedback on enhancing the HCT application. The public health officials advise sorting out LPPOM MUI halal certificate and halal promise certificate to ensure clarity. Tourist officials suggested changing appearance of the application to become more attractive and interesting for user to use it. Cooperatives and SMEs Official advised to display price of products so that consumers can choose their purchase based on their affordability. Chairman of
Development of Halal Culinary Tracking Application Strategies

Figure 3. Strategy development hierarchy of HCT application
Malang SMEs community suggested that the image display products that are more interesting. Each dominant food souvenirs centre was expected to become an icon in HCT application which can increase the demand of these products. This feedback is very important to develop HCT application.

CONCLUSION

The development of HCT application in Malang was undertaken using AHP method. Factor and alternative strategies development score of HCT application are as follows: The first priority factor to develop HCT application is user-friendly with a weight of 0.423. The highest priority of alternative strategy to develop HCT application is ease of access with a weight of 0.249. These results support those of Wang and Wang (2010), and Lai et al. (2014).

Some suggestions for HCT application developments are:

1. Improve application because it has less functional searching feature, so that it would be better and easier to use in public.

2. Display features innovation, such as icon of SMEs product, as icon in HCT application and change icon image to a more attractive one, so the application is able to compete with similar applications.

3. Further research is expected can improve the initial appearance of the application and make it easier to use for greater efficiently.

REFERENCES


Halal Culinary Tracking at Food Souvenir Centres


Review Article on Potentials of Big Data in the Halal Industry

Tan, M. I. I.1*, Fezarudin, F. Z.1, Yusof, F. M.2, Rosman, A. S.2 and Husny, Z. J. M.3

1Halal Informatics (HOLISTICS) Research Lab, Block S45, Universiti Teknologi Malaysia (UTM), 81310 Johor Bahru, Johor, Malaysia
2Center of Research for Fiqh Science & Technology (CFiRST UTM) S45, Universiti Teknologi Malaysia (UTM), 81310 Johor Bahru, Johor, Malaysia
3Faculty of Built Environment, Universiti Teknologi Malaysia (UTM), 81318 Johor Bahru, Johor, Malaysia

ABSTRACT

The growth of “big data” can be observed in healthcare, financial, education, social network, food and other sectors. Unfortunately, big data has received little attention in the halal industry. This article describes the potentials and benefits of big data in the halal industry. It starts with a description of the concept and application of big data analytics (BDA) in various industries. The background of halal industries are also discussed. The SWOT/TOWS analyses show the strengths, weaknesses, opportunities and threat from big data analytics in the halal industry. The article concludes BDA has huge potential impact on the halal industry such as food and beverages, pharmaceuticals, education and logistics among others.

Keywords: Analytics, big data, halal, SWOT/TOWS

INTRODUCTION

Big data, a new “buzz-word” in the field of science, technology, and industry, refers to massive amounts of data and their different structures. They are too complex to manage, store, and analyse using traditional database management tools. Nowadays, data do not originate only from human beings, but are also created by devices or machines. These data are generated from online transactions, emails, videos, audios, images, click stream, logs, posts, search queries, health records, social networking interactions, science, sensors and mobile phones, and their
applications (Eaton, Deroos, Deutsch, Lapis, & Zikopoulos, 2012; Schneider, 2012). The characteristics of big data analytics (BDA) are classified into ‘5 Vs’ which represent Volume, Velocity, Variety, Value, and Veracity. Moreover, the growth of Big Data can be seen from the way healthcare, the financial sector, education, food, and other industries apply BDA to help them make better decisions within their organisations. The usage of BDA offers many advantages to the public sector, companies, and customers respectively.

The successful implementation of BDA in various other industries has opened the eyes of companies and organisations involved in the halal industry. The halal industry is among the fastest growing markets in the world, which is estimated at USD2.3 trillion annually (Rahman, Saleh, Rahman, & Hashim, 2012; Shafii & Khadijah, 2012). The demand for halal products and services is growing significantly due to the increasing number of the Muslims worldwide. Approximately 1.8 billion, thereby increasing their purchasing power (Kamaruddin, Iberahim, & Shabudin, 2012). At the same time the acceptance of halal products and services by non-Muslims also demonstrates positive feedback. The concept of halal not only focuses on food and beverages (F&B), but also applies to the non-F&B products and services, such as pharmaceuticals, cosmetics, and logistics. According to Tan and Ibrahim (2014), there are five sub-sectors in the halal industry landscape that can adopt the concept of BDA.

Section 1 of this article outlines the objective of this paper. It presents SWOT analysis to identify strengths, weaknesses, opportunities, and threats from BDA in the halal industry. The next section defines and describes the characteristics of BDA, methods used in this study, current implementation in various industries as well as issues and problems faced by the halal industry. Section 3 discusses the result of SWOT/TOWS analysis and the potential for implementation of BDA in the halal industry. Section 4 summarises and concludes the paper.

**Concept of Big Data/5Vs of Big Data**

According to Services (2015), the characteristics of Big Data can be classified into ‘3 Vs’ - volume, velocity, and variety. Recently, the definition of Big Data was stretched from ‘3 Vs’ to ‘5 Vs’ by adding value and veracity (Demchenko, Grosso, Laat, & Membrey, 2013; Katal, Wazid, & Goudar, 2013). Figure 1 shows the ‘5 Vs’ of Big Data.

**Volume.** This refers to the amount or size of data. The amount of data will gradually increase until it becomes difficult to handle them using the existing traditional systems.

**Velocity.** This refers to the speed of data originating from various sources. This characteristic is not limited merely to the speed of incoming data but also the speed at which the data flows.
Variety. This refers to the inconsistencies of types of data. They may be categorised as structured, unstructured, or semi-structured.

Value. Value is an important feature of data which is defined by its added-value contribution to predictive analysis.

Veracity. This ensures data is from trusted sources, authentic, and protected from unauthorised access and modification. It must be secured during the its lifecycle commencing from collection from trusted sources to processing on trusted computing facilities and storage in protected and trusted facilities.

To date, there are several types of platforms in BDA including Hortonworks, Cloudera, and MapR. All these various platforms are also known as Hadoop distributions - an open source data processing platform comprising several types of tools, namely HDFS, MapReduce, Hive, Zookeeper, Cassandra, Spark and Mahout. Every tool has a different task in the Hadoop distributions. The usage of BDA brings a huge advantage to the public sector, companies, and also customers. According to Russom (2011), the advantages of using BDA in an organisation are: improved marketing; better business insights; client-based segmentation; and recognition of sales and market opportunities. Nevertheless, BDA also reveals the existence of potential threats and disadvantages in the use of big data, such as their processes are extremely complex, the programming is intensive, and costly, staff lack expertise, difficulties in designing analytic systems, lack of database
software in analytics, and the need for application of a variety of skills.

**Current Implementation of Big Data Analytics**

Big data is a new technology in the market which can provide considerable benefits to business organisations. Evidence from other industries such as healthcare, government, the finance, and tourism support the successful implementation of big data. Table 1 shows the implementation of big data in various industries.

### Table 1

<table>
<thead>
<tr>
<th>Industries</th>
<th>Big Data Analytics Application (BDA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthcare</td>
<td>It can help physicians and patients identify diseases at earlier stages by providing clinical data, analytics from a physician’s report, and also machine-generated data (Raghupathi &amp; Raghupathi, 2014). Furthermore, BDA assists in managing specific health issues among individuals and the general population as well as the ability to detect healthcare fraud more quickly and efficiently.</td>
</tr>
<tr>
<td>Government</td>
<td>It can be used to maintain domestic tranquillity, achieve sustainable development, secure citizens’ basic rights, and promote general welfare and economic growth. Traditional methods usually delay decision making in government (Kim, Trim, &amp; Chung, 2014). The BDA can also reduce risks and increase efficiency and effectiveness of government decision making (Stone, 2002).</td>
</tr>
<tr>
<td>Finance</td>
<td>It can help design marketing activities, execute campaigns, and capture sales leads across all channels, product lines, and customer segments (Turner, Schroek, &amp; Shockley, 2013). It also enables provision of improved services to customers by having better understanding of their needs and anticipates future behaviours. The BDA can assist financial industries to generate better sales leads, enhance products, and generally improves customer satisfaction.</td>
</tr>
<tr>
<td>Tourism</td>
<td>In the tourism industry, data is generated by customers from a variety of sources, namely airlines, hotels, rental cars, trains. Thus, BDA can help the tourism industry to understand customer requirements to better organise their vacation. In essence, BDA provides improved support for decisions, enhanced customer relationships, as well as cheaper, and faster data processing (Davenport, 2013).</td>
</tr>
</tbody>
</table>

**Halal Industry**

The halal industry has received special attention not just in Malaysia but all over the world as a potential big business. The demand for halal products and services is on the rise due to demand from Muslims for Shariah-compliant products, also known as halal products (Yunus, Rashid, Ariffin, & Rashid, 2013). The rapid growth of the halal market is not just limited to food products but also services. According to Che Man and Abdul Latif (2003), the demand for halal products is expanding rapidly and this can be attributed to the increasing number...
of Muslims worldwide and their awareness of halal products.

However, there are a few issues concerning the halal industry in Malaysia that need to be considered to ensure effectiveness and efficiency of its certification process. Noordin, Noor, Hashim and Samicho (2009) highlighted four problems: data being lost or misplaced; an unreliable and outdated e-halal database; lack of integrated halal information; and an unsystematic filing system. Their finding was supported by Ibrahim (2013). He had interviewed industry players who shared the same concerns. They agreed that there is a lack of synchronisation of information in the halal database between halal authorities. Moreover, the biggest concern in the halal industry is the lack of database for halal, haram, and syubhah products, ingredients, and additives (Ismail & Ihsan, 2013). All of these issues ultimately affect the business process. This is especially so for companies producing several products, as they need to obtain certification for each product. These issues can affect the operations of the halal industry in several sub-sectors, such as manufacturing, medical and health, and education. All of these issues are related to the areas where data is constantly being generated, not only by halal authorities, but also by companies, manufacturing plants, suppliers, and laboratories.

**METHOD**

In this study, the SWOT/TOWS analysis identified strengths, weaknesses, opportunities, and potential threats arising from the use of BDA in halal industry. The SWOT/TOWS analysis is an examination of the strengths and weaknesses of an organisation, coupled with both opportunities and threats that it faces externally (Lynch, 2012). The use of SWOT/TOWS analysis provides a platform by which to recognize the preferred future position, and identify issues. This was agreed by many researchers (David, 2009; Porter, 2007). The SWOT/TOWS analysis is defined based on the following criteria:

- **Strengths** are internal attributes of an organisation that are helpful to the achievement of its objective.
- **Weaknesses** are internal attributes of an organisation that are harmful to the achievement of its objective.
- **Opportunities** are external conditions that are helpful to the achievement of these objectives.
- **Threats** are external conditions that are harmful to the achievement of these objectives.

This analysis will allow the organisation to have an in-depth understanding of the potentials and benefits of the implementing BDA in the halal industry. The analysis underlines strengths, weaknesses, opportunities, and threats (SWOT) with respect to the halal industry, as well as the way in which BDA could be used to increase the growth of halal industry. The next section will discuss in detail the SWOT analysis for this study.
RESULTS AND DISCUSSION

From the foregoing, it is clear the implementation of BDA can solve issues and problems in the halal industry as it can extract embedded knowledge from large amounts of data and react according to it in real time. Table 2 shows the results of SWOT/TOWS analysis.

In addition to the SWOT/TOWS analysis, this study also discusses each sub-sector in the context of a halal industry landscape. There are five important sub-sectors according to Tan and Ibrahim (2014). All of these sub-sectors in the halal industry landscape have the potential to implement BDA in their organisations. Table 3 contains the following: five sub-sectors of the halal industry; the usage of BDA in every sub-sector; advantages; disadvantages; as well as the possibility of the BDA application being used in every sub-sector of the halal industry.

Table 2
The SWOT/TOWS analysis for the halal industry (BDA)

<table>
<thead>
<tr>
<th>SWOT / TOWS Matrix</th>
<th>Internal Factors</th>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>S1 5Vs of Big Data</td>
<td>W1 Lack of skilled workers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S2 Open Source Software</td>
<td>W2 BDA facilities and equipment items</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S3 Decision-Making</td>
<td>W3 Data accuracy</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S4 Marketing Strategies</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Opportunities</th>
<th>S – O Strategies</th>
<th>W – O Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>O1 Improve the quality of products and services</td>
<td>S2O2 Use BDA open source software to handle the halal certification process in Malaysia</td>
<td>W1O5 Expand the skills of human capital in the halal industry regarding BDA</td>
</tr>
<tr>
<td>O2 Efficiency of the halal certification process</td>
<td>S3O1 Make a better decision based on the real-time data to improve the quality of halal products and services</td>
<td>W2O3 Allocate a portion of the company’s budget to meet the cost of BDA implementation</td>
</tr>
<tr>
<td>O3 Increase economics of the halal market</td>
<td>S4O3O4 Increase marketing strategies of the halal industry in Malaysia by updating the trends of halal products and services</td>
<td></td>
</tr>
<tr>
<td>O4 Expand the area of halal industry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>O5 Increase Human Capital Development in the halal industry</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>External Factors</th>
<th>S – T Strategies</th>
<th>W – T Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1 Security of data</td>
<td>S1T1T2 Apply the 5Vs of BDA (Volume, Variety, Velocity, Value, and Veracity) to capture the issues regarding data</td>
<td>W1T1T2 Provide training to workers on BDA to ensure they can apply it in the halal industry</td>
</tr>
<tr>
<td>T2 Inappropriate data</td>
<td>S2T3 Use BDA open source software such as Hadoop to easily extract data in real-time and process an enormous dataset</td>
<td>W2W3T3 Hire a consultant to identify equipment, facilities, the measures to conduct BDA in the halal industry</td>
</tr>
<tr>
<td>T3 Data Extraction process</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Table 3

**BDA application in the halal industry**

<table>
<thead>
<tr>
<th>Sub-Sectors</th>
<th>Description</th>
<th>Big Data Analytics</th>
<th>Advantages</th>
<th>Disadvantages</th>
<th>Possibility of Application</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Manufacturing</strong></td>
<td>Halal products are those that do not involve haram ingredients, are not harmful to be used, and the materials that make up these products must be traceable from the original source (Hanzaee &amp; Ramezami, 2011). The manufacturing process covers raw materials, packaging, suppliers, and ingredients for every product.</td>
<td>Examples of BDA are raw materials, supplier ingredients, supplier packaging, utensils used in the manufacturing, standards related to the manufacturing sector, and employee information. By using BDA, all of these data will become valuable information that can help the manufacturing sector to make a better decision and improve their products by ensuring that the products completely comply with the halal concept.</td>
<td>By using BDA, it is envisaged that all of these data will become valuable information that can help the manufacturing sector to ensure halal integrity from the source to the final products. Updated information from the suppliers can assist the manufacturing sector to obtain a halal certificate in a shorter time period.</td>
<td>It is difficult to obtain data from suppliers. This is due to the low level of understanding of BDA concept and the importance of historical data. For most of the suppliers, their information is private and confidential.</td>
<td>It is possible for the manufacturing sector to implement BDA. This is because the sector mostly comprises large business with many employees and a stable budget. The manufacturing sector only needs to convince suppliers to permit access to their information.</td>
</tr>
<tr>
<td><strong>Logistics</strong></td>
<td>The process of managing the procurement, movement, storage and handling of material parts, livestock, semi-finished or finished inventory of both food and non-food items, and related information and documentation flows through the organisation and the supply chain in compliance with the general principles of Shariah law (Tieman, 2013).</td>
<td>Examples of data include: a list of transportation used to convey the halal products; a list of the products contained in each transportation delivery; scheduling for delivery; route taken to deliver the halal products; and the standard related to the logistics sector. By using BDA, organisations can detect potential contamination of halal products during the delivery service. Therefore, they can prevent this matter from occurring.</td>
<td>Each of the transportation deliveries used in the logistics sector has a different route or destination and different types of halal products to deliver. Therefore, the usage of BDA can help the logistic companies to keep track of their daily activities such as their destination, the route taken, and products in and around each of the transportation deliveries automatically in a shorter time period. This makes it easier for employees to detect any potential contamination during the delivery process.</td>
<td>It is difficult to scan each of the products being transferred from one place to another. In addition, it takes time for product determination whether it is halal or haram in every pit stop. Moreover, the installation of this scanning tool is expensive.</td>
<td>This process is possible if the logistic companies have enough employees to handle the scan verification for each of the products and monitoring of data.</td>
</tr>
</tbody>
</table>
A document issued by the Halal authority (JAKIM) certifies that the products or services listed meet the requirements of Shariah law. It starts from the source of the raw material and extends until the product is ready to be consumed by the consumer. This is known as “farm to fork” (Ibrahim, 2013).

By using BDA, the companies that applied for the halal certification are classified into three categories, namely, pass, fail, and in progress. A lot of data need to be analysed, such as a list of products and ingredients; tools used to produce the Halal product; as well as the Halal standard in each of the halal schemes. These data must be real-time data order to enable the halal authorities to detect any misuse of halal certification or Halal logo, and to grant halal certification for the companies.

The use of BDA makes it more convenient for the halal authorities to grant halal certification. The process of granting a halal certificate will also be faster because there is a platform that can act as a reference that includes the product information (halal or haram) and halal standards. Moreover, halal authorities and companies can automatically update the halal standard when changes occur.

It takes time to extract data, especially for product information. The product information can only be extracted from the companies and suppliers of the product. This information needs to be verified to ensure that there is no error in the data, especially for the halal status segment.

The implementation of the BDA is possible in this sector as there is a need to extract a considerable amount of data from different sources. Any changes in the halal standards also need to be updated by the halal certified companies.

### Sub-Sectors

<table>
<thead>
<tr>
<th>Description</th>
<th>Big Data Analytics</th>
<th>Advantages</th>
<th>Disadvantages</th>
<th>Possibility of Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard and Certification</td>
<td>By using BDA, the companies that applied for the halal certification are classified into three categories, namely, pass, fail, and in progress. A lot of data need to be analysed, such as a list of products and ingredients; tools used to produce the Halal product; as well as the Halal standard in each of the halal schemes. These data must be real-time data order to enable the halal authorities to detect any misuse of halal certification or Halal logo, and to grant halal certification for the companies.</td>
<td>The use of BDA makes it more convenient for the halal authorities to grant halal certification. The process of granting a halal certificate will also be faster because there is a platform that can act as a reference that includes the product information (halal or haram) and halal standards. Moreover, halal authorities and companies can automatically update the halal standard when changes occur.</td>
<td>It takes time to extract data, especially for product information. The product information can only be extracted from the companies and suppliers of the product. This information needs to be verified to ensure that there is no error in the data, especially for the halal status segment.</td>
<td>The implementation of the BDA is possible in this sector as there is a need to extract a considerable amount of data from different sources. Any changes in the halal standards also need to be updated by the halal certified companies.</td>
</tr>
<tr>
<td>Medical and Health</td>
<td>Products must consist of ingredients that are permitted under Shariah law and safe for consumption. It must not contain human parts and derivatives and must be stored separately from products that are non-halal. Halal pharmaceuticals are a harmonisation of Shariah law, Good Manufacturing Practice (GMP) standards and the approved halal supplier and material list (Ikram, Ghanı, &amp; Basari, 2013).</td>
<td>It takes a longer period of time to obtain halal certification for drugs in the market due to the complexity of ingredients used to make them. The ingredients used for this sector are hardly detectable as being halal, haram, or syubhah. The implementation of BDA in this sector will gather all the data from the companies that produce the drugs in real-time. Data is analysed and categorised as halal (Green), haram (Red), and syubhah (Grey). This database will help the halal authorities to expedite the granting of halal certification.</td>
<td>The use of BDA, can help the medical and health sector to identify the halal status of each of the ingredients used to produce drugs. Therefore, the time taken to obtain a halal certificate will be shortened as halal authorities and companies can refer to this platform to identify the product status quickly and easily.</td>
<td>Identification of the ingredients in the drug is extremely complicated because they are too small and cannot be seen through our eyes. Therefore, the recorded data might not be fully complete. The process enables identification of inaccurate results.</td>
</tr>
</tbody>
</table>
### Table 3 (continue)

<table>
<thead>
<tr>
<th>Sub-Sectors</th>
<th>Description</th>
<th>Big Data Analytics</th>
<th>Advantages</th>
<th>Disadvantages</th>
<th>Possibility of Application</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Education</strong></td>
<td>It is vitally important to have comprehensive knowledge of the religious and scientific aspects of what constitutes halal or haram. It is also crucial to be able to identify the steps taken to avoid a product becoming Haram and doubtful products especially during this current era. <em>(Al-Mazeedi, 2012).</em></td>
<td>There is currently a lot of training to being offered so participants can understand the halal concept. The training is important to cater for human capital in the Halal industry. However, some workers lack understanding of halal requirements. All of these issues can be solved by using BDA which means providers and workers can identify the appropriate halal training for Halal certified companies.</td>
<td>The implementation of BDA in the education sector can help the Halal industry to reduce the gap between halal training and human capital in the halal industry. This is after making a prediction on the appropriate training needed for a certain job position in the halal industry.</td>
<td>Unfortunately, the lists of halal training are displayed in various sources or platforms such as websites, social media, and email. It is difficult to extract data pertaining to Halal training. Accordingly, employees need to manually extract the data from various platforms.</td>
<td>It is possible to implement the BDA concept in the education sector. It can lead to greater availability of expertise required for the halal industry and helps job seekers to identify the appropriate Halal trainings needed to fulfil the companies’ demands.</td>
</tr>
</tbody>
</table>
CONCLUSION
This article has described the enormous opportunities for the halal industry by implementing BDA due to enhanced computing capabilities combined with the increasing amount of data that industry generates every second, in various different formats and a variety of sources. The findings indicate BDA will become the logical approach for the halal industry to store, manage, and analyse data. By using a BDA approach, the halal industry players can make better decisions in the most efficient way.

However, the implementation of BDA can also create issues and challenges for the halal industry that still need to be dealt with. The halal industry still faces problems, such as lack of skilled manpower; lack of the BDA tools; lack of accurate data; as well as lack of understanding of BDA in each of the five sub-sectors in the halal industry. The strengths, weaknesses, opportunities, and threats as identified in the SWOT/TOWS analysis for the implementation of the BDA in the halal industry were also discussed in addition to implementation of BDA in the five important sub-sectors in terms of their advantages, disadvantages, and possibility of application.

REFERENCES


Perceived Value and Satisfaction towards Shariah-Compliant Hotel

Nurul Azhani, M. A.1*, Zainab, K.2 and Hairul, N. I.1

1Faculty of Built Environment, Universiti Teknologi Malaysia (UTM), 81310 Skudai, Johor, Malaysia
2Faculty of Management, Universiti Teknologi Malaysia (UTM), 81310 Skudai, Johor, Malaysia

ABSTRACT

In Malaysia, some businesses have introduced Shariah-Compliant Hotel to cater to the needs of Muslim travellers. However, only a limited number of empirical researches have examined the perceived value of Muslim tourists vis a vis Shariah-Compliant Hotel in Malaysia. Delivering value is very important to hotel operators, as it has been proven as a competitive advantage and could influence customers in making decisions. Therefore, this study examined the interrelationship between the perceived value of Muslim tourists and the effect of this value in their satisfaction. Six hypotheses were developed and tested using a sample of 136 Muslim tourists who have experienced staying at Shariah-Compliant Hotel. Data was analysed using the Partial Least Square algorithm (PLS-SEM). The finding reveals six dimensions of Muslim tourist perceived value (quality, price, emotional value, social value, Islamic physical attribute’s value and Islamic non-physical attribute’s value) that have positive effects on their satisfaction. These findings are useful to stakeholders, especially hoteliers, to gain a better understanding of how to increase Muslim tourist satisfaction as well as develop effective marketing strategies for Shariah-Compliant Hotel.

Keywords: Muslim tourist, perceived value, satisfaction, shariah-compliant hotel

INTRODUCTION

In today’s highly competitive hospitality industry, hoteliers must be aware of customers’ changing needs and demands. According to Woodruff and Gardial (1996), hotels must focus on increasing customer value in order to sustain their business. Gale (1994) suggested that every company must identify their customer value in regard to their products or services. Evaluation of these factors can be guide to improve...
existing products and services and in turn increase customer satisfaction and loyalty (Raval and Grönroos, 1996).

The construct of perceived value has been widely employed in the hospitality and tourism literature (Bajs, 2015). However, none of these studies has discovered the perceived value of purchase from an Islamic viewpoint (Eid, 2013). A review of previous literature points to a dearth of studies on the perceived value of Muslim tourists towards Shariah-Compliant Hotel. It is critical the tourism industry and hospitality providers understand and recognize the preferred products or services of Muslim tourists.

As the competition to attract Muslim traveller intensifies, it will become increasingly important for industry operators, especially hoteliers, to identify the variables that will attract Muslim travellers. Hoteliers thus need to fulfil the religious needs of their customers (Delener, 1990; Nazlida and Mizerski, 2010; Weidenfeld, 2005). Thus, the present study explores the perceived value among Muslim tourists towards Shariah-Compliant Hotel in Malaysia, and the effect of this value on their satisfaction.

LITERATURE REVIEW

Shariah-Compliant Hotel

The concept of Shariah compliant hotel was initiated by Islamic countries such as Kuwait and Saudi Arabia, as most Muslim travellers originate from these regions, and influence the potential growth (Stephenson, Russell, & Edgar, 2010). Muhammad (2009) defined a Shariah-Compliant Hotel as “a hotel that not only serves halal foods and drinks, but also abides with all health, environment, and safety parameters that are suitable for mankind, such as faith, race, and culture”. Steinmetz (2008) noted in UAE (United Arab Emirates), there are only a few hotels that follow this concept. The Shariah-compliant hotel concept is similar to the Islamic Banking concept formulated in 1970, which had slowly gained strength over the years to fully abide by Shariah-based principles.

A Shariah compliant hotel acknowledges Islamic attributes in the hospitality industry (Stephenson, 2014). According to Salleh, Hamid, Hashim and Omain (2014), this hotel stresses on fulfilling the customer’s religious needs, which focuses on family and health. Rosenberg and Choufany (2009) examined three major aspects as guidelines for Shariah compliant hotel operation: operations, design and interiors, and financial aspect. Most researchers, industry analysts, and practitioners agree with these set of attributes regarding hotel operations introduced by Henderson (2010), which include:

- The hotel should be able to provide or serve halal and non-alcoholic drinks.
- The Holy Quran and prayer mats are readily available with a Qiblah indicator in all rooms of the hotel.
- The placement of beds and the design of toilets should be in the opposite direction of the Qiblah.
- A prayer room is available for customers.
• The hotel must not have dancing clubs or any sort of unsuitable forms of entertainment.
• The Muslim staff must have a proper dress code.
• Separate recreational facilities should be available for men and women, such as swimming pools, gyms, etc.
• Separate rooms/floors should be available for unmarried couples.
• The hotel has an appropriate tourist dress code.
• Alcoholic drinks and gambling should not be allowed in the restaurant and hotel lobby.
• No alcoholic beverages and prohibited foods in the refrigerator.

Stephenson (2014) added that Shariah compliant hotel must deliver their products and services according to Islamic principles, including their cosmetics and toiletries, which must contain halal products that are free from animal extracts. A Shariah compliant hotel will provide a halal environment, which offers a safe and healthy environment for the tourists. In addition, the financial operation for Shariah compliant hotels must also comply with Shariah regulations where a portion of the revenue must be contributed as Zakat (Samori & Rahman, 2013; Stephenson, 2014).

Malaysia is known as a country that is serious in establishing itself as a Muslim tourist destination. In addition, it has been recognised as the top 2015 Mastercard-Crescent Rating Global Muslim Travel Index (GMTI) for the fifth year in a row. Due to it being a potential hub for Islamic tourism, Malaysia has introduced a comprehensive standard for Muslim-friendly hospitality services through MS2610:2015 (Muslim Friendly Hospitality Services – Requirements). The Muslim-Friendly Hospitality Services Standard was launched in December 2015, which clearly indicates the Government’s commitment to formulate precise and clear guidelines for Islamic hospitality services.

The Concept of Perceived Value

Studies show there is no clear definition of consumer’s perceived value (McDougall & Levesque, 2000; Zeithaml, 1988). The meaning of the concept varies according to the research context and depends on numerous interpretations (Oliver, 1996; Sweeney, 1999). As an example, from the economic perspective, value refers to utility or desirability, while for the industrial sector, value is associated with minimising cost and at the same time maintaining quality. In addition, value also refers to human behaviour, such as emotional and instrumental values.

Previous studies divided perceived value into two parts: (1) benefits received; and (2) sacrifices made (Cronin, Brady, & Hult, 2000; Oh, 2003). Zeithaml (1988) proposed perceived value as an overall evaluation of product or services depends on a comparison between what is received and what is given. Thaler (1985) showed that perceived value involved evaluating various pricing, for example, advertised
selling price, advertised reference price, and internal reference price.

Perceived value can also be defined as a subjective and dynamic construct where it can be experienced before, during, and after purchase (Sanchez, Callarisa, Rodriguez, & Moliner, 2006). Different groups of people have different definitions of perceived value. They are researchers (Lai, 1995), consumers (Holbrook, 1994; Zeithaml, 1988), and practitioners (Woodruff & Gardial, 1996). Besides that, the dimensions of perceived value also vary between cultures at any point in time (Assael, 1995; Ravald & Gronroos, 1996). Studies pointed to two types of operationalisation perceived value i.e. (1) the uni-dimensional approach and (2) the multi-dimensional approach (Sánchez-Fernández & Iniesta-Bonillo, 2007). Figure 1 illustrates the two research streams on perceived value.

The uni-dimensional approach determines value based on a limited number of variables, which represent the total value of perception. This approach believes that all consumers have the same value, but the determinants of value are different. Due to this, the uni-dimensional approach has been argued as lacking in reliability and validity (Jayanti & Ghosh, 1996; Woodruff & Gardial, 1996). The multi-dimensional approach analyses value based on multiple variables. As an example, Petrick (2002) identified five dimensions to this approach: quality, monetary price, non-monetary price, reputation, and emotional response while Sweeney, Soutar and Johnson (1999) proposed five constructs to evaluate the retail purchase environment: social value (acceptability), emotional value, functional value (price/value for money), functional value (performance/quality) and functional value (versatility).

![Diagram of perceived value research streams](image_url)

*Figure 1. Research streams on perceived value*

*Source: Sánchez-Fernández and Iniesta-Bonillo (2007)*
Despite many perspectives commonly used to measure customer value, the Islamic aspect of value has not been as widely addressed (Eid, 2013). Religious identity is seen as playing a key role in influencing consumption choices among Muslim customers including in the Hospitality and Tourism sector. In Islam, all Muslims are compulsory to consume products or services that are compliant with Shariah or Islamic principles, as stated in the Qur’an. Islamic attributes influence the decision of Muslim tourists to travel to certain destinations (The World Travel Market Global Trend Reports, 2007). Islamic attributes relate to Islamic norms and the extent to which they are practised at a particular destination (Battour, Battor & Bhatti, 2014). According to Weidenfeld (2005), services that factor in religious provisions may attract new markets and increase hotel rates.

**Relationship between Perceived Value and Satisfaction**

The concept of perceived value and satisfaction has been studied for several decades, but there are still uncertainties among researchers and practitioners as to whether they are actually of the same construct. Woodruff and Gardial (1996) defined perceived value as a natural relationship between the consumer and products or services while consumer satisfaction was described as consumer reaction resulting from a particular product or service. Most researchers believe that perceived value is a different construct from satisfaction because perceived value can exist at different stages of the purchasing process. However, satisfaction is a reaction of the value received. In other words, perceived value can be generated without experience or using the particular product or services, while satisfaction can be gained based on the experience of the product or services (Woodruff, 1997). Satisfaction was proven to be a good predictor of post-purchase intention (Anderson & Sullivan, 1993; Cronin & Taylor, 1992). Tourist satisfaction is also an important element in the selection of destination and decisions to revisit (Yoon & Uysal, 2005). According to Chi and Qu (2007), a satisfied tourist is more willing to revisit the same destination and would be more likely to share his/her experience with relatives and friends. In tourism marketing, word of mouth is considered the most dependable information source for potential tourists (Yoon & Uysal, 2005).

**METHOD**

A quantitative method was used in this study with the objective to determine the perceived value of Muslim tourists and their satisfaction based on their stay in a Shariah-Compliant Hotel. In this study, Muslim tourists who have experienced staying at SCH/Muslim-friendly hotels are considered the target population. As the research aim is to examine Muslim tourists’ perception on value and satisfaction, all tourists over 18 years of age were considered as targeted respondents. This study utilised convenient sampling technique due to the unidentified sample population and sampling frame as
well as the nature of the study. Non-random sampling method was chosen due to a non-existing list of all the tourist populations that have stayed at a Shariah-Compliant Hotel in Malaysia. Thus, a non-random sample was the only option left for the researcher.

Convenient sampling is a method where every individual in the population have an equal chance of being selected and only involves individuals who agree to participate. A deliberate approach was adopted to encourage respondents to participate in this survey. The sample includes domestic and international Muslim tourists. According to Roscoe (1975), a sample size larger than 30 and less than 500 is appropriate for most researches. Based on this rule, 150 respondents were chosen to participate in this study. A total of 136 questionnaires were completed returned and 14 questionnaires were excluded due to excessive missing values. The 7-point Likert type response scale, which ranges from 1-Strongly disagree to 7-Strongly agree, was used due to its utility in assessing tourist experience of a destination and its efficiency in evaluating respondent attitudes (Echtner & Ritchie, 1991).

RESULT AND ANALYSIS

Descriptive Analysis

From Table 1, most of the respondents in this study were male (61%) and between 30 and 39 years of age (42.6%). The largest group of respondents were Malaysians (91.9%). The accompanying parties were likely to be family members (44.9%). The purpose of travel for the majority of the respondents was for holiday (64%). For international respondents, the average length of stay in Malaysia was between one and three nights (45%).

<table>
<thead>
<tr>
<th>Description</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>83</td>
<td>61</td>
</tr>
<tr>
<td>Female</td>
<td>53</td>
<td>39</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 20 years</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>20-29 years</td>
<td>55</td>
<td>40.4</td>
</tr>
<tr>
<td>30-39 years</td>
<td>58</td>
<td>42.6</td>
</tr>
<tr>
<td>40-49 years</td>
<td>10</td>
<td>7.4</td>
</tr>
<tr>
<td>50-59 years</td>
<td>12</td>
<td>8.8</td>
</tr>
<tr>
<td>Country of Origin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malaysia</td>
<td>125</td>
<td>91.9</td>
</tr>
<tr>
<td>Others</td>
<td>11</td>
<td>8.1</td>
</tr>
<tr>
<td>Travel Party</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solo</td>
<td>19</td>
<td>14</td>
</tr>
<tr>
<td>Spouse</td>
<td>34</td>
<td>25</td>
</tr>
<tr>
<td>Family Members</td>
<td>61</td>
<td>44.9</td>
</tr>
<tr>
<td>Friends</td>
<td>22</td>
<td>16.2</td>
</tr>
<tr>
<td>Purpose of Visit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Holiday</td>
<td>87</td>
<td>64</td>
</tr>
<tr>
<td>Visit Friends and Relatives</td>
<td>8</td>
<td>5.9</td>
</tr>
<tr>
<td>Business Conferences</td>
<td>11</td>
<td>8.1</td>
</tr>
<tr>
<td>Official Missions</td>
<td>30</td>
<td>22.1</td>
</tr>
<tr>
<td>Length of Stay</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-3 nights</td>
<td>5</td>
<td>45.5</td>
</tr>
<tr>
<td>4-6 nights</td>
<td>3</td>
<td>27.3</td>
</tr>
<tr>
<td>1-2 weeks</td>
<td>1</td>
<td>9.1</td>
</tr>
<tr>
<td>More than 2 weeks</td>
<td>2</td>
<td>18.2</td>
</tr>
</tbody>
</table>
Assessment of Measurement Model

The PLS analysis can be divided into two stages, namely the Measurement model, and Structural model. The Measurement model process evaluates validity and reliability of the items, while the Structural model entails an examination of the relationship between latent constructs whereby research hypotheses are tested (Chin, 2010; Hair, Hult, Ringle, & Sarstedt, 2014). A reflective measurement model evaluates, assesses, and emphasises convergent validity and discriminant validity. Convergent validity is the extent to which the same construct is correlated with the other. According to Hair et al. (2014), the recommended values for loadings are set at > 0.5, the average variance extracted (AVE) should be > 0.5, and the composite reliability (CR) should be > 0.7. Table 2 shows that the measurement model’s convergent validity is highly acceptable.

Subsequently, the discriminant validity, which is the degree to which items are distinct from other constructs, was assessed. The criteria for assessment is that the item value should be higher than its own constructs in the model, and the average variance shared between each construct and its measurement should be greater than the variance shared between the construct and other constructs (Fornell & Larcker, 1981). Table 3 shows the comparison of the square root of the AVE for each construct with the correlation of the remaining constructs. The acceptability of the discriminate validity for all of the constructs in this framework is also indicated.

<table>
<thead>
<tr>
<th>Construct</th>
<th>Item</th>
<th>Loadings</th>
<th>AVE</th>
<th>CR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satisfaction</td>
<td>SAT1</td>
<td>0.873</td>
<td>0.834</td>
<td>0.962</td>
</tr>
<tr>
<td></td>
<td>SAT2</td>
<td>0.883</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SAT3</td>
<td>0.956</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SAT4</td>
<td>0.918</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SAT5</td>
<td>0.935</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional</td>
<td>e1</td>
<td>0.911</td>
<td>0.724</td>
<td>0.887</td>
</tr>
<tr>
<td></td>
<td>e2</td>
<td>0.907</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-physical</td>
<td>npa1</td>
<td>0.8</td>
<td>0.635</td>
<td>0.874</td>
</tr>
<tr>
<td>Physical attribute</td>
<td>npa2</td>
<td>0.794</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>npa3</td>
<td>0.796</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>npa4</td>
<td>0.751</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Price</td>
<td>p1</td>
<td>0.778</td>
<td>0.677</td>
<td>0.807</td>
</tr>
<tr>
<td></td>
<td>p2</td>
<td>0.865</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical attribute</td>
<td>pa1</td>
<td>0.797</td>
<td>0.649</td>
<td>0.905</td>
</tr>
<tr>
<td></td>
<td>pa2</td>
<td>0.809</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>pa3</td>
<td>0.879</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>pa4</td>
<td>0.758</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>pa5</td>
<td>0.743</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service Quality</td>
<td>q1</td>
<td>0.803</td>
<td>0.635</td>
<td>0.924</td>
</tr>
<tr>
<td></td>
<td>q2</td>
<td>0.773</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>q3</td>
<td>0.821</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>q4</td>
<td>0.836</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>q5</td>
<td>0.799</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>q6</td>
<td>0.752</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>q7</td>
<td>0.772</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social</td>
<td>s1</td>
<td>0.891</td>
<td>0.826</td>
<td>0.905</td>
</tr>
<tr>
<td></td>
<td>s2</td>
<td>0.816</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>s3</td>
<td>0.845</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
This section discusses the path analysis to show if the hypotheses of this study are supported. According to findings, the $R^2$ value is 0.394, which indicates that 39.4% of the variance in Muslim tourist satisfaction upon staying at Shariah-Compliant Hotel can be explained by the dimensions of service such as Quality, Price, Emotional, Social, Islamic Physical attributes, and non-Physical attributes. It is also critical to evaluate the predictive capacity of the $R^2$ of the research model. Chin (1998) suggested that the $R^2$ value of 0.67, 0.33, and 0.19 for the endogenous latent variable are considered substantial, moderate, and weak respectively. Thus, from the findings, the $R^2$ value for this study can be described as moderate. Table 3 indicates that all the hypotheses in this research are supported with t-values ranging from 2.335 to 3.879. According to Chin (1998), the t-value of the path coefficients evaluate the relationship of each hypothesis. Table 4 presents a summary of the hypotheses proposed in this study.

Table 3
Result of discriminant validity

<table>
<thead>
<tr>
<th></th>
<th>Emotional</th>
<th>Non-Physical Attribute</th>
<th>Physical Attribute</th>
<th>Price</th>
<th>Satisfaction</th>
<th>Service Quality</th>
<th>Social</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional</td>
<td>0.851</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Physical Attribute</td>
<td>0.396</td>
<td>0.797</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical Attribute</td>
<td>0.45</td>
<td>0.559</td>
<td>0.806</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Price</td>
<td>0.541</td>
<td>0.411</td>
<td>0.427</td>
<td>0.823</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Satisfaction</td>
<td>0.386</td>
<td>0.444</td>
<td>0.428</td>
<td>0.539</td>
<td>0.913</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service Quality</td>
<td>0.551</td>
<td>0.52</td>
<td>0.494</td>
<td>0.698</td>
<td>0.47</td>
<td>0.797</td>
<td></td>
</tr>
<tr>
<td>Social</td>
<td>0.59</td>
<td>0.297</td>
<td>0.72</td>
<td>0.405</td>
<td>0.435</td>
<td>0.455</td>
<td>0.909</td>
</tr>
</tbody>
</table>

Table 4
Result of hypothesis testing

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>std. beta</th>
<th>std. error</th>
<th>T-value</th>
<th>Decisions</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1 price -&gt; satisfaction</td>
<td>0.372</td>
<td>0.096</td>
<td>3.879</td>
<td>Supported</td>
</tr>
<tr>
<td>H2 service quality -&gt; satisfaction</td>
<td>0.11</td>
<td>0.031</td>
<td>3.471</td>
<td>Supported</td>
</tr>
<tr>
<td>H3 emotional -&gt; satisfaction</td>
<td>0.11</td>
<td>0.031</td>
<td>3.471</td>
<td>Supported</td>
</tr>
<tr>
<td>H4 social -&gt; satisfaction</td>
<td>0.278</td>
<td>0.119</td>
<td>2.335</td>
<td>Supported</td>
</tr>
<tr>
<td>H5 physical attribute -&gt; satisfaction</td>
<td>0.08</td>
<td>0.033</td>
<td>2.333</td>
<td>Supported</td>
</tr>
<tr>
<td>H6 non-physical attribute -&gt; satisfaction</td>
<td>0.258</td>
<td>0.087</td>
<td>2.976</td>
<td>Supported</td>
</tr>
</tbody>
</table>
DISCUSSION AND CONCLUSION

The analysis of this study supports the research model and the hypothesis. The main contribution of this finding is the importance of value in driving Muslim tourist satisfaction. Tourism providers should consider the importance of value in influencing tourist evaluations of their services and experiences, which will influence their future behavioural intentions (Gill, Byslma, & Ouschan, 2007). The current finding substantially adds to the understanding on customer value from the perspective of the Muslim tourist. It is irrelevant to expect that the dimensions of value are similar to different customers and cultures. Thus, hotel providers need to acknowledge the importance of the numerous value dimensions, for an effective positioning strategy and to promote this type of hotel. Our finding also addressed the importance of Islamic physical attribute and non-physical attribute values on Muslim tourist satisfaction. Therefore, hotel providers should provide a service that represents the Islamic elements and these would influence Muslim tourist choice of hotels.

REFERENCES


Optimising Malaysian Shariah-Compliant Real Estate Investment Trusts: Perspective of REIT Managers

Nor Nazihah Chuweni1,2*, Chris Eves1 and Andrea Blake1

1Science and Engineering Faculty, Queensland University of Technology, Queensland 4001, Australia
2Faculty of Architecture, Planning, and Surveying, Universiti Teknologi MARA (UiTM) Perak, 32610 Seri Iskandar, Perak, Malaysia

ABSTRACT

Globally, the market for Shariah-compliant products and services has expanded in recent years. Malaysia, Saudi Arabia and Luxembourg are now considered global Islamic capital market hubs. Islamic capital market products and instruments include the Islamic Equity Market in which the Islamic Real Estate Investment Trusts (REIT) are included. The purpose of this paper is to examine the performance measurement methods adopted by Malaysian REIT (M-REIT) managers, particularly those engaged in Shariah-Compliant REIT management. The existing performance measurement methods for conventional and Islamic REITs were identified through an extensive review of the current academic literature. Using semi-structured interviews with senior Malaysian REIT managers, including the Chief Executive Officer, Chief Financial Officer, Chief Operating Officer, Chief Investment Officer and senior executives, this paper examines various methods and instruments used to measure REIT performance from the management perspective. Based on the semi-structured interviews, the distribution yield was identified as the most significant performance measure and is used as a benchmark by M-REIT managers to enhance REIT performance. Greater transparency in this decision-making strategy may lead to an increase in the efficiency level and better performance to capture greater investor confidence in this promising investment sector.

Keywords: Malaysia, property investment, REIT, Shariah-compliant

Current affiliation:
Chris Eves
RMIT University, Melbourne, Australia
chris.eves@rmit.edu.au

* Corresponding author

ARTICLE INFO

Article history:
Received: 1 March 2017
Accepted: 23 November 2017
E-mail addresses:
nornazihah.chuweni@hdr.qut.edu.au/
norma92@perak.uitm.edu.my (Nor Nazihah Chuweni)
chris.eves@qut.edu.au (Chris Eves)
a.blake@qut.edu.au (Andrea Blake)

ISSN: 0128-7702 © Universiti Putra Malaysia Press
INTRODUCTION
The market for Shariah-compliant products and services has expanded significantly over the past years with Malaysia, Saudi Arabia, and Luxembourg becoming the Islamic capital market hubs, which collectively house 71% of Islamic funds globally (Thomson Reuters, 2014). The Global Islamic Asset Management Report by Thomson Reuters (2014) indicates that these three dominant markets remain the most active in developing and regulating their fund sector, evident by their series of initiatives across the Asia and GCC market to help safeguard investors interest.

The Islamic capital market products and instruments include the Islamic Equity Market in which Islamic Real Estate Investment Trusts (REIT) have been introduced. The fundamental difference between the Islamic capital markets and the conventional capital market is that the former has its own Shariah framework. Any violation of this framework will affect the validity of Islamic capital market.

Malaysia was a pioneer in the Shariah-compliant real estate investment trust when the Islamic REIT guideline was introduced in November 2005. Singapore, UAE, and Bahrain introduced their first Shariah-compliant real estate investment funds, namely Sabana REIT and Dubai Islamic Bank’s Emirates REIT in 2010 and Bahrain’s Al Salam Bank Asian Islamic REITs fund in 2014. As at December 2014, Malaysian Islamic REITs were the largest in terms of market capitalisation of USD5 billion, followed by Middle East Islamic REITs worth USD501 million and Singapore’s Sabana REIT with USD377.2 million (see Table 1).

Table 1
Global Shariah-Compliant REITs: December 2014

<table>
<thead>
<tr>
<th>No</th>
<th>Country</th>
<th>Fund name</th>
<th>Date established</th>
<th>Market cap US$ (December 2014)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Malaysia</td>
<td>Al Aqar Healthcare REIT</td>
<td>2006</td>
<td>5 billion</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Axis REIT</td>
<td>2005*</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>KLCC REIT</td>
<td>2013</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>GCC region</td>
<td>Al Mahrab Tower REIT</td>
<td>2008</td>
<td>300 million</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Arabian REIT</td>
<td>2006</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inoest REIT</td>
<td>2009</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Emirates REIT</td>
<td>2010**</td>
<td>201 million</td>
</tr>
<tr>
<td>3</td>
<td>Singapore</td>
<td>Sabana REIT</td>
<td>2010</td>
<td>377.2 million</td>
</tr>
</tbody>
</table>

Note. *Axis REIT reclassified into an Islamic REIT in December 2008
** Emirates REIT became a public listed REIT in April 2014
Source: Authors’ compilation from Bloomberg and various sources (2015)
Currently, there are 17 Malaysian REITs listed on Bursa Malaysia, of which, four are Shariah-compliant, namely Axis REIT, Al Aqar REIT, stapled KLCCP REIT and currently listed Al-Salam REIT (see Table 2). The Axis REIT which was listed as a conventional REIT in 2005, and converted to an Islamic REIT in 2008 with a view to broadening its investor base to include conventional investors and to gauge the demand from Muslim investors. Both foreign and domestic investors demand a similar level of performance analysis from these Shariah-compliant investment vehicles. In addition, performance measurement is crucial for the REIT managers to stay competitive in the market. The purpose of this paper is to investigate the various performance measurement commonly used by the REIT managers, particularly the Shariah-Compliant REITs in Malaysia.

Table 2
List of Malaysian REITs: December 2015

<table>
<thead>
<tr>
<th>Malaysian REIT</th>
<th>Date listed</th>
<th>Property sector</th>
<th>Market cap (RM Million)</th>
<th>Rank by market cap</th>
</tr>
</thead>
<tbody>
<tr>
<td>KLCC REIT</td>
<td>May 2013</td>
<td>Office and retail</td>
<td>12,745.65</td>
<td>1</td>
</tr>
<tr>
<td>Pavilion REIT</td>
<td>Dec 2011</td>
<td>Retail</td>
<td>4,677.66</td>
<td>2</td>
</tr>
<tr>
<td>IGB REIT</td>
<td>Sept 2012</td>
<td>Retail</td>
<td>4,652.20</td>
<td>3</td>
</tr>
<tr>
<td>Sunway REIT</td>
<td>Jul 2010</td>
<td>Retail, hotel, office</td>
<td>4,524.18</td>
<td>4</td>
</tr>
<tr>
<td>CapitaLand Malaysia Mall Trust (formerly known as CapitaMalls Malaysia Trust)</td>
<td>July 2010</td>
<td>Retail</td>
<td>2,800.00</td>
<td>5</td>
</tr>
<tr>
<td>Axis REIT</td>
<td>Aug 2005</td>
<td>Office, industrial</td>
<td>1,803.00</td>
<td>6</td>
</tr>
<tr>
<td>YTL Hospitality REIT (formerly known as Starhill REIT)</td>
<td>Dec 2005</td>
<td>Hotel</td>
<td>1,375.00</td>
<td>7</td>
</tr>
<tr>
<td>Al-'Aqar Healthcare REIT</td>
<td>Aug 2006</td>
<td>Healthcare</td>
<td>1,020.00</td>
<td>8</td>
</tr>
<tr>
<td>MRCB-Quill REIT (formerly known as Quill Capita Trust)</td>
<td>Jan 2007</td>
<td>Office, commercial</td>
<td>714.29</td>
<td>9</td>
</tr>
<tr>
<td>UOA REIT</td>
<td>Dec 2005</td>
<td>Office</td>
<td>676.60</td>
<td>10</td>
</tr>
<tr>
<td>Hektar REIT</td>
<td>Dec 2006</td>
<td>Retail</td>
<td>608.96</td>
<td>11</td>
</tr>
<tr>
<td>Al-Salam REIT</td>
<td>Sept 2015</td>
<td>Retail, industrial, office</td>
<td>539.40</td>
<td>12</td>
</tr>
<tr>
<td>AmFirst REIT</td>
<td>Dec 2006</td>
<td>Office, retail</td>
<td>511.37</td>
<td>13</td>
</tr>
<tr>
<td>Amanahraya REIT</td>
<td>Feb 2007</td>
<td>Office, retail, industrial, hotel</td>
<td>460.37</td>
<td>14</td>
</tr>
<tr>
<td>Tower REIT</td>
<td>Apr 2006</td>
<td>Office</td>
<td>345.02</td>
<td>15</td>
</tr>
<tr>
<td>Atrium REIT</td>
<td>March 2007</td>
<td>Industrial</td>
<td>133.98</td>
<td>16</td>
</tr>
<tr>
<td>Amanah Hartanah PNB (AHP)**</td>
<td>Dec 1990</td>
<td>Office</td>
<td>101.00</td>
<td>17</td>
</tr>
</tbody>
</table>

Note. Islamic and Shariah-Compliant REITs shown in bold
*AHP was established as property trust funds and reclassified as REIT in August 2005.
Previous Studies on Malaysian REIT Performance Measurement

Literature suggested various methods were adopted to measure the performance of the Shariah-compliant investment vehicles compared with conventional investment asset classes. Chuweni et al. (2014) reviewed previous literature on performance measurement of Malaysian Islamic REITs. Other studies measured and analysed performance of Islamic REITs using various approaches and strategies in order to maximise shareholder returns and interest (Chuweni, Ahmad, & Mohd Adnan, 2014; Chuweni, Ahmad, & Ting, 2014). For instance, Chuweni, Ahmad and Chuweni (2016) analysed and compared the performance of Shariah-Compliant REITs in Malaysia and other countries using a cross section analysis of financial ratios. Their REIT funds included three Malaysian REITs, Axis REIT, Al-Aqar Healthcare REIT and KLCC REIT, Singapore’s Sabana REIT and UAE’s Emirate REIT. Results revealed that the Emirates REIT was the highest performer followed by the Malaysian REITs and Sabana REIT. Osmadi and Razali (2014) measured the financial and management strength of three Malaysian REITs, namely Al-Aqar KPJ REIT, Al-Hadharah Boustead REIT and Axis REIT during the global financial crisis (GFC) from 2007-2009. Their results revealed that Malaysian Islamic REITs performed well and retained financial and management strength during the GFC, implying the Shariah restrictions could provide a competitive advantage in real estate investment.

Akinsomi, Ong, Ibrahim and Newell (2014) measured the idiosyncratic risk of four groups of investment vehicles, namely restrictive Shariah-compliant portfolio, less restrictive Shariah portfolio, Equity REIT portfolio and the overall REIT market portfolio. They found a significant positive relationship between idiosyncratic risk and Shariah-Compliant REIT returns despite the restrictive Shariah-compliant portfolio. Razali and Sing (2015) measured the systematic risk of Islamic and conventional REITs in Malaysia from 2005 to 2014 by using static and time-dependent capital asset pricing models. They found Malaysian Islamic REITs exhibited low systematic risks, suggesting investor’s protection against market volatilities.

Newell and Osmadi (2009) measured the performance of Malaysian Islamic REITs using risk-adjusted total returns and found that they could enhance portfolio diversification. Similarly, Rozman, Azmi, Mohd Ali and Razali (2015) extended the study and examined the risk-adjusted performance of Malaysian Islamic REITs in a mixed asset portfolio. Their result shows that Islamic REITs outperformed both share and bond market and has low correlation between share and bond, suggesting high diversification benefits for the investors.

In terms of corporate governance, Chuweni and Ahmad (2014) used descriptive and content analysis to examine ownership structure and financial statements to determine the optimal type of Malaysian Islamic REITs. They found that the emerging governance model is the
best model for Malaysian Islamic REITs due to the dominant characteristics of the concentrated and pyramidal model. Chuweni, Azri and Ting (2016) evaluated the price determinations for Malaysian Islamic REITs using the Dividend Discount Model, the Net Asset Value, and the Price Earnings Ratio. They identified the price earnings ratio as the best pricing method to forecast the REIT expected performance and prices.

Rubio, Hassan and Merdad (2012) measured the risk and return relationship of Islamic and conventional mutual funds using the non-parametric approach of Data Envelopment Analysis. The results revealed that the Islamic fund exhibited higher efficiency performance compared with their international counterpart. In a study by Bahlous and Mohd. Yusof (2014) measured using Autoregressive-Distributed lag (ARDL) Islamic investment funds were found to provide regional diversification. A similar result was noted for Malaysian unit trusts. Using different performance measurement to the Sharpe, Treynor, Jensen, Fama Carhart’s four-factor pricing models, Hassan, Khan and Ngow (2010) found that Malaysian unit trust funds provided international diversification benefits to reduce financial risks. However, Mansor and Bhatti (2011) contradicted this result when they measured the risk-return analysis on the performance of Malaysian Islamic mutual funds using monthly average returns from 1996 to 2009. Their results showed that Islamic portfolios carried greater risks than the conventional ones.

**METHOD**

To achieve an in-depth understanding of the performance measurement method used by the REIT managers, semi structured interviews were conducted with senior top REIT managers, namely Chief Executive Officer, Chief Operating Officer, Chief Financial Officer, Chief Investment Officer and senior executives. An open-ended approach to interview questions was used to encourage the top REIT managers to offer their opinions based on the normal practice in the industry. This approach was designed to ensure an elevated level of reliability of the study. Furthermore, the respondents are top decision-makers involved in the fund’s management and operation, performance measurement, risk management and property investment portfolios.

All Malaysian REIT managers were invited via email to participate in this study. A telephone call was then made with the relevant Personal Assistant to arrange for a face-to-face interview. From this method of respondent recruitment, ten respondents agreed to participate and face-to-face interviews were conducted in April and May 2016. The profile of respondents is outlined in Table 3. The respondents are very experienced professionals and representatives of both Shariah-compliant REITs (4:40%) and conventional REITs (6:60%). The study is gender balanced with males (5:50%) and females (5:50%).

The interviews were conducted on a confidential basis and verbatim notes were compiled for data analysis purposes.
The interviews were designed to last 40-60 minutes in duration. Initially, open ended unprompted questions were asked by the Interviewer followed by prompted questions to further explore issues raised by the Respondents. Data was analysed using coding and data entry in QSR NVivo Version 11 computer software. Coding involved assigning responses or answers into many themes. For the interview analysis, a few themes were identified and this paper will mainly focus on the various performance and benchmark measurement methods.

Table 3
Respondents’ profile

<table>
<thead>
<tr>
<th>Respondent</th>
<th>Position</th>
<th>Working experience (in years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1</td>
<td>Chief Operating Officer</td>
<td>13-15 years</td>
</tr>
<tr>
<td>R2</td>
<td>Chief Executive Officer</td>
<td>13 – 15 years</td>
</tr>
<tr>
<td>R3</td>
<td>Chief Executive Officer</td>
<td>20 – 30 years</td>
</tr>
<tr>
<td>R4</td>
<td>Senior executive</td>
<td>10 – 15 years</td>
</tr>
<tr>
<td>R5</td>
<td>Chief Financial Officer</td>
<td>20 – 30 years</td>
</tr>
<tr>
<td>R6</td>
<td>Chief Financial Officer</td>
<td>20 years</td>
</tr>
<tr>
<td>R7</td>
<td>Senior executive</td>
<td>20 years</td>
</tr>
<tr>
<td>R8</td>
<td>Chief Executive Officer</td>
<td>20 – 30 years</td>
</tr>
<tr>
<td>R9</td>
<td>Chief Financial Officer</td>
<td>20 years</td>
</tr>
<tr>
<td>R10</td>
<td>Senior executive</td>
<td>20 years</td>
</tr>
</tbody>
</table>

RESULTS AND DISCUSSION
This section analyses the results of the interviews conducted and develops a descriptive model of how REIT Managers measure and benchmark their performance against their peers in the industry.

Performance Measurement Methods
When the respondents were asked about their REIT performance measurement, one of the dominant themes that emerged was that distribution yield or distribution per unit (DPU) growth which was most commonly used followed by various other methods including asset growth or capital appreciation, net asset value, total return, management expense ratio, market capitalisation and earning per share. The following are the examples and the reasons for choosing distribution yield as the preferred performance measurement:

“The measurement of REITs performance, REITs is based on the dividend pay-out, so the key performance is your ability to pay sustainable returns in the form of dividend as it is not really an instrument, unlike other capital markets where you buy and flip easily. REITs share price doesn’t fluctuate that much”.

(Respondent 1)
“For REIT, normally the investors invest in REIT because of the yield, and the dividends that we distribute. So, naturally, when it comes to our performance, it's driven by the returns or the dividend that we distribute. We have yield and the other one is capital appreciation. The capital appreciation is the appreciation in share price. For the long-term investor, they stay on for every quarter dividend payment. Some investors, when the share price moves, they sell”.

(Respondent 6)

“The lower your dividend yield is, the better your performance. It means higher market price. If you look at all the top five REITs in Malaysia, out of 17, you’ll find that in the top five in terms of assets size and market cap, these larger REITs are substantially bigger than the balance. So, you find that the yields that they command are around 5-6% across dividend yield. Whereas, the one that are outside these large REITs are around that 7-8%. It comes up to the yield; you find that lower yield has more demand for the unit of the share price”.

(Respondent 8)

“The key performance measurements at REIT level are dividend yield, total return, DPU growth Premium/discount to NAV, Market capitalisation and asset under management”.

(Respondent 9)

“We measure the REIT performance using distribution yield derived from the formula of the ration of the income distribution paid to a REIT unitholder by REIT’s price paid by the unit holders or the prevailing market price of the REIT. Other indicators include net asset value, management expense ratio and total return”.

(Respondent 4)

Almost all respondents said that the distribution yield was the most significant performance measurement method for analysing REIT performance. However, Respondents 2 and 3 nominated asset growth or capital appreciation as the most significant performance measure rather than distribution yield for the following reason:

‘The investors are also looking for how managers would like to grow the REIT which determines performance. Investors are looking towards how a manager can add more assets because by adding more assets, it will increase value and more income that you can distribute. So, in total, growing asset is first criteria followed by distribution yield because automatically when you have a new asset, then it will enhance your distribution yield and before we require assets, we must...
make sure that they (the assets) that we require must not dilute the existing dividend”.

(Respondent 3)

“It’s quite straightforward. At the end of the day, how much you can give to your unitholder? So, unitholder normally will look at two things; the capital appreciation of their units and how much we pay them in terms of income distribution. So, they will look at dividend yield and the performance of the market. So, we try to give the best yield for our unitholder. Even in the difficult market conditions, we try to pay out more than 90% and give a competitive rate of a dividend or income distribution to the unitholders”.

(Respondent 2)

Benchmarking against Other Peers

When the REIT managers were asked if there was any difference in terms of the performance methods for benchmarking purposes, the predominant answer remains that it is the distribution yield that will attract investors to the REIT.

“There are a lot of ways to benchmark ourselves against other REITs funds. We can’t really benchmark the price, dollar to dollar because of the REITs fund, they come in variation of sizes. It’s not a fair comparison but the best way to compare ourselves against the market is to see, first, our dividend payout, whether it has been consistent...”.

(Respondent 1)

“Normally, the benchmark based on the market is the yield. If you want to benchmark this on the total asset, then we are very small, but if you benchmark against the yield, we are one of the highest paid yield in the market”.

(Respondent 5)

Respondents 1 and 6 also confirmed that managing the asset is the critical to compare the performance and benchmark against peers in the industry.

“...another way to compare the performance is to see how active the REITs is. So basically, a REITs
manager, their real test come to place is when they can basically grow the assets or the portfolios. So that's how I always measure myself against other REITs”.

(Respondent 1)

“Growth is also one part of ensuring that we continue to provide a steady income of the dividends. We need to have also a big asset to inject so that we can see the meaningful rate of growth. So, when talking about growth we look not only the size of the asset, but the asset that we want to inject must also be dividend accretive. REITs asset must be making money with an income cashflow that we can get from that asset.”.

(Respondent 6)

Benchmarking also depends on the purpose of the investment and the investors’ objective. For instance, Respondents 5 and 2 claimed that apart from yield, certain investors look at liquidity and the period of investment.

“...depends on what is the purpose of benchmarking. Normally, investor, their first intention is to get the highest yield possible, but certain investor they look at liquidity and long term. If you look for liquidity, then REIT would be not favoured or favourably lower because REITs don’t have much liquidity in the market. So, benchmarking depends on the objectives, where, how and what is the purpose”.

(Respondent 5)

“I think for REIT market, most people are there for the long term. They hold the shares or the unit for a long term for the yield and capital appreciation. For Malaysian REIT, we rarely have seen much capital appreciation because, in terms of share price, it is very stable. For us, we have shareholders which have been very loyal to us since day one. They are still there because of the attractiveness in holding the units for them”.

(Respondent 2)

Analysis of interviews has shown that there is a alignment between the opinions of Shariah-compliant REIT managers and conventional REIT managers in terms of performance measurement methods adopted and benchmarking against their peers. Despite the Shariah-Compliant REITs having a limited investment universe, the results from the previous literature indicate there is a diversification benefit which provides greater opportunity for global investors, not limiting the REIT to investment from those seeking Shariah-compliant investments. The opportunity and potential of the shariah-compliant market are also reflected in the response of non-Shariah-Compliant REIT managers that they would consider converting to Shariah-compliant REITs should the right circumstances occur.
CONCLUSION

The paper examined various methods and instruments to measure REIT performance from the management perspective. Based on the semi-structured interviews, the distribution yield or the distribution per unit (DPU) growth was identified as the significant performance measure and used as a benchmark by M-REIT managers to enhance REIT performance. Therefore, it is recommended that the distribution yield be used as one of the variables in regression analysis or other performance measurement methods such as the efficiency and productivity model with a view to optimising Malaysian REIT performance. The authors will extend this research with respect to the management and operation of REITs and undertake future research in identifying the key determinants of best practice for each M-REIT, particularly the Shariah-Compliant REITs. Greater transparency in decision-making strategies will lead to increased efficiencies and superior performance in the sector, which will elevate investor confidence in this promising investment sector.

ACKNOWLEDGEMENTS

The authors gratefully acknowledge the funds provided by Malaysian Ministry of Higher Education and Universiti Teknologi MARA (UiTM) to undertake this study.

REFERENCES


and development in the global halal industry (pp. 401–410). Springer. doi: 10.1007/978-981-10-1452-9_37


Purchase Intention of Islamic Brand Product among Non-Muslim Customers

Ya, S.*, Nor, M. M. N., Noor, S. M. and Ahmad, Z.
Faculty of Business Management, Universiti Teknologi MARA (UiTM) Perlis, 02600 Arau, Perlis, Malaysia

ABSTRACT
Nowadays, majority of Muslim customers demand halal products due to increasing awareness. There is also a high demand for halal products from non-Muslim countries. Due to these reasons, manufacturers need to understand Islamic branding in order to penetrate Muslim market. However, there is lack of study about Islamic branding from the non-Muslim perspective and the emergence of unethical issues on Islamic branding involving non-Muslim producers. Therefore, this research was conducted among non-Muslim customers to ascertain the relationship between customer perception and customer loyalty towards customers’ purchase intention. A set of questionnaires was administered to 201 non-Muslim employees of multiple international companies in Malaysia. Data was obtained through structured questionnaires. It was divided into three sections with statements measuring customer perception, customer loyalty and purchase intention. Results indicate that customer perceptions have a significant relationship with purchase intention of Islamic branding. This research concludes with several suggestions for marketing strategies which focus on Islamic branding.

Keywords: Customer loyalty, halal products, Islamic branding, perception, purchase intention

INTRODUCTION
Hygiene and safety have been touted as the biggest benefits of consuming halal products. Thomson Reuters and Dinar Standard ‘State of the Islamic Economy’ estimated that the global halal industry is currently valued at US$2.3 trillion (Wilson, 2014). The growth in the demand for halal products are also spilling over to non-Muslim consumers, especially in halal food...
sector, Islamic finance, Islamic products and services such as cosmetics, real estates, hotels, fashion and insurance, the value of which is estimated at nearly US$1.5 trillion a year (Alserhan, 2010).

A halal product is associated with the concepts of cleanliness, purity and kindness (Alserhan, 2010). Furthermore, most non-Muslims consume halal products for health reasons. (Haque, Sarwar, Yasmin, & Kumar, 2015). Based on the halal ruling, all processes from farm to production and delivering to customers are done hygienically (Abdullah, 2007).

Awan, Siddiquei and Haider (2015) discovered that most of customers in major cities of Pakistan rely on halal marketing, personal and societal perception and halal certifications before making purchase decisions of food products. However, for Non-Muslims, religious belief is the least important factor when making a purchase decision of halal food. Haque et al. (2015) further claimed that the perception of non-Muslim consumers about halal food products is influenced by their attitude, subjective norm and perceived behavioural control, specifically in the context of Malaysia.

In addition, halal accreditation meets many conventional quality standards, such as ISO, Hazard Analysis and Critical Control Point and Good Hygienic Practice (Rezai, Mohamed, & Shamsudin, 2012). By meeting halal requirements, manufacturers will produce better quality products.

There are many studies related to halal purchase intention (Alam & Sayuti, 2011; Lada, Tanakinjal, & Amin, 2009; Mukhtar & Butt, 2012), but only a few focused on non-Muslims (Rezai et al., 2012; Haque et al., 2015). Therefore, this study attempts to identify the relationship between customer perception and loyalty in determining purchase intention among non-Muslims customers. The results of this study will assist manufacturers and marketers in taking necessary actions to serve their customers better as well as coming up with well-planned marketing campaign for their non-Muslim market. The paper begins with a discussion of relevant studies in this area before proposing a conceptual framework. The methodology used to guide the research is briefly reviewed before presenting the results and managerial implications.

LITERATURE REVIEW
This section provides a discussion on studies related to the topic. It will begin with the discussion on Islamic branding, purchase intention, customer perception and customer loyalty.

Islamic Branding
Branding is a marketing strategy to create a unique name and image for certain products in a customer’s mind. Noor (2010) states that Islamic branding is friendly or compliant with Sharia’ principles. According to Alserhan (2010), Islamic branding consists of brands that are Sharia’-compliant or halal, originate from Islamic countries and targets Muslim consumers. Thus, the term of Islamic branding and halal means
the same whereby halal means something which is sanctioned by Islamic law (Rezai et al., 2012).

However, there are arguments on Islamic branding or the definition of halal. For example, wines produced in Tunisia, Turkey and Egypt can be concluded by certain people as halal and Islamic when the term is used to describe products originating from Islamic countries. Therefore, Alserhan (2010) provided a clear understanding of Islamic branding regarding the issue. Yusof and Jusoh (2014) found most of consumers agreed that Islamic branding is defined as a product or service that is Sharia’-compliant which requires any parties that are involved in halal accreditations to implement strict procedures before issuing halal certification (Rezai et al., 2012).

Brand represents consumer perception and sentiment toward product and service. Aziz and Chok (2013) suggest that brand is an important determinant for halal purchase intention. Studies on Islamic branding have been conducted in various contexts such as the banking sector (Ahmad, 2016; Jalil & Rahman, 2014; Kishada & Wahab, 2013; Muhamad & Alwi, 2015), education (Mourad & Karanshawy, 2013), manufacturing and plantation (Yusof & Jusoh, 2014) as well as food industry (Aziz & Chok, 2013). Hence, there is a huge demand for Islamic brand or halal, which is powered by a huge Islamic market, in addition to a growing number of multinational companies competing to capture both Muslim and non-Muslim markets (Alserhan, 2010).

**Purchase Intention**

Purchase intention is defined as “the possibility that consumers will plan or be willing to purchase a certain product or service in the future” (Wu, Yeh, & Hsiao, 2011). According to Dodds, Monroe and Grewal (1991), purchase intention is an attempt to purchase a product or service. Purchase intention has been widely used in the literature as a predictor of subsequent purchase and the concept was found to be strongly correlated with actual behaviour (Fishbein & Ajzen, 1975).

To understand various factors that contribute to purchase intention, Theory of Reasoned Action (TRA) is commonly used to explain behaviours, such as action, attitude or manner that an individual engages in or possesses (Rahman, Asrarhaghighi, & Rahman, 2015). The TRA was developed to better understand the relationships among attitudes, intentions and behaviour (Fishbein, 1967). Mukhtar and Butt (2012) stated that TRA is the most relevant theoretical model in the context of halal products. For instance, Amin (2013) extended the use of TRA within the context of halal service to examine customer preference towards Islamic credit cards. In addition, Rahman (2015) discovered that there is a positive relationship between attitude and intention to purchase cosmetics and food products using TRA.

Several studies on purchase intention have pointed to different factors that affect such behaviour. Aziz and Chok (2013) discovered that halal awareness, halal certification and brand were positively
related to purchase intention of halal products. In contrast, the halal awareness variable did not support intention to purchase as shown by Awan et al. (2015) findings. They further point out that personal societal perception, halal marketing, halal certification and belief influence purchase intention of halal products. Moreover, an intention to purchase halal product is also driven by high-involvement behaviour traits for halal-conscious consumers who are risk averse (Wilson, 2011).

Several studies focused on purchase intention in manufacturing and services industries such as food-related aspect (Awan et al., 2015; Aziz & Chok, 2013), cosmetics and personal care products (Rahman et al., 2015), and banking industry (Amin, 2013). There are many perspectives on purchase intention towards halal products and services.

Customer Perception
Consumer usage and buying of any product are based on their perception about the product. Perception is formed through various marketing endeavours. Increasing the marketing effort may lead to customer attention and positive impression of the firm’s product. Perception is how people analyse and interpret stimuli (Sitter, 2005).

Customer perception is the customer’s thought and awareness about a company’s products or service. Branding is used by the marketers to form a good perception about the brand to the customers. Brand image helps create the value and identity for the customers (Rayburn & Voss, 2013). On the other hand, perceived quality represents a consumer’s judgment about the brand’s overall superiority and/or excellence. The superiority of products or services offered by companies or brands will mostly depend on consumer perception of the quality that may result in repetitive buying behaviour of loyal consumers (Das, 2014).

Customer Loyalty
Customer loyalty can be identified as a deep commitment to continuously buying a product or services in the future regardless of any other marketing efforts that were targeted at switching customer intention (Yim, David, & Chan, 2008). According to Choi and Chou (2001) there is a significant positive relationship between customer satisfaction and customer loyalty. This relationship is further strengthened as customers get “tremendously satisfied” or “delighted”. Customer loyalty is used to describe the behavior of repeat customers, as well as those that offer good ratings, reviews, or testimonials (Kumar & Advani, 2009). Customer loyalty can also be defined as the loyalty shown by the customer towards a product or service that was offered to them by a company. There are many ways customers show their loyalty. For example, one attitude shown by a loyal customer is repeat purchase. Thus, loyalty can be identified as the customer’s tendency to repurchase from the same companies (Edvardsson, Johnson, Gustafsson, & Strandvik, 2000).

A loyal customer is good for businesses to develop customer retention towards the
company’s products or services offered rather than choosing any other brands. Loyal customers can be defined as customers that have favourable attitudes toward an organisation which will influence them to recommend its product or services to other consumers and display repurchase behaviour (Dimitriades, 2006).

According to Iddrisu (2011), loyalty is developed over a period of time from a consistent record of meetings, and sometimes even exceeding customer expectations. Customer loyalty can therefore be achieved in some cases by offering a quality product with a firm guarantee or through free offers, coupons, low interest rates on financing, high value trade-ins, extended warranties, rebates, and other rewards and incentive programmes to develop happy customers who will return to purchase again and persuade others to use that company’s products or services. In this study, customer loyalty is used to examine the relationship towards purchase intention among non-Muslim customers.

**METHODS**

This is a cross sectional study using a set of questionnaires adapted from several studies. Purchase intention variable was adopted from Shaari and Mohd Arifin (2009), customer perception measurement was adopted from Jalil and Rahman (2014), and customer loyalty was adopted from Kishada and Wahab (2013). There are several sections in the questionnaire. Section A is on respondents’ demographic information, Section B is on the purchase intention, Section C is on customer perception and Section D is on customer loyalty. There are 18 items in the questionnaire. The respondents are non-Muslim employees of international companies. The sample size is 201.

**RESULTS AND DISCUSSION**

The study was conducted in 2016 at several multiple international companies in Kuala Lumpur. Majority (55.7%) of the respondents were female and most (34.8%) were between 31 and 40 years old and held a degree (49.8%). The respondents’ demographics are shown in Table 1.

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Percentage (n = 201)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>44.3</td>
</tr>
<tr>
<td>Female</td>
<td>55.7</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
</tr>
<tr>
<td>Below 21</td>
<td>4.5</td>
</tr>
<tr>
<td>21-30</td>
<td>33.8</td>
</tr>
<tr>
<td>31-40</td>
<td>34.8</td>
</tr>
<tr>
<td>41-50</td>
<td>20.4</td>
</tr>
<tr>
<td>51-60</td>
<td>6.5</td>
</tr>
<tr>
<td><strong>Education/Qualification</strong></td>
<td></td>
</tr>
<tr>
<td>SPM</td>
<td>2.5</td>
</tr>
<tr>
<td>STPM</td>
<td>0.5</td>
</tr>
<tr>
<td>Diploma</td>
<td>30.3</td>
</tr>
<tr>
<td>Degree</td>
<td>49.8</td>
</tr>
<tr>
<td>Master</td>
<td>41.4</td>
</tr>
</tbody>
</table>

A Cronbach alpha test shows a range of 0.7-0.8 which indicates that the instrument is appropriate for use (Sekaran, 2011). The mean value for all dimensions shows that most respondents agree with the statements.
in the questionnaire. Table 2 shows the Cronbach alpha value, mean and standard deviation of the variables used in this study.

In order to achieve the objectives of this study, first, data was analysed using Pearson Correlations. Table 3 depicts a strong relationship between customer perception and customer purchase intention with $r=0.764$ at 99% significant level. Similarly, the relationship between customer loyalty and customer purchase intention also shows a strong significant relationship ($r=0.649$, $p=0.01$).

A multiple regression test was conducted to understand the factors that affect customer purchase intention among non-Muslim consumers. The result shows the adjusted $r^2$ is 0.644, with a different weighting of standard coefficient. Among the variables, customer perception is significant, with a standard coefficient of 1.238. Therefore, in this model, only customer perception explains the purchasing intention of the Islamic brand or halal product. This finding is consistent with that of Rezai et al. (2012) on non-Muslim understanding that halal products are healthier and safer.

Customer loyalty may increase business revenue and total customer market share (Luo, Chen, Chin, & Liu, 2011). Sometimes purchase intention is used to describe customer loyalty (Juhl, Kristensen, & Ostergaard, 2002) which is supported by Aghaei, Asadollahi, Tonekaboni, Tajasom and Abbasi (2013), and Das (2014). However, this study found no significant relationship between customer loyalty and purchase intention. The respondents in this study consist of non-Muslims that normally consume both halal and non-halal products. Thus, they are not selective in purchasing goods.

### Table 2

<table>
<thead>
<tr>
<th>Variables</th>
<th>No. of items</th>
<th>Cronbach alpha</th>
<th>Mean</th>
<th>Std. deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase intention</td>
<td>6</td>
<td>0.865</td>
<td>3.0448</td>
<td>0.88833</td>
</tr>
<tr>
<td>Customer perception</td>
<td>6</td>
<td>0.778</td>
<td>2.9444</td>
<td>0.98072</td>
</tr>
<tr>
<td>Customer loyalty</td>
<td>6</td>
<td>0.727</td>
<td>2.7396</td>
<td>0.69181</td>
</tr>
</tbody>
</table>

**Notes:** All items used 5 Likert scale (with 1 = strongly disagree and 5 = strongly agree)

### Table 3

<table>
<thead>
<tr>
<th></th>
<th>Customer Purchase Intention</th>
<th>Customer perception</th>
<th>Customer loyalty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer Purchase Intention</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Customer perception</td>
<td>0.764**</td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td>Customer loyalty</td>
<td>0.666**</td>
<td>0.739**</td>
<td>1.000</td>
</tr>
</tbody>
</table>

*p <0.05; **p<0.01
Table 4  
Multiple regression result

<table>
<thead>
<tr>
<th>Variables</th>
<th>β</th>
<th>t-value</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer perception</td>
<td>1.238</td>
<td>8.100</td>
<td>0.000</td>
</tr>
<tr>
<td>Customer loyalty</td>
<td>0.107</td>
<td>1.580</td>
<td>0.116</td>
</tr>
</tbody>
</table>

*p<0.01  
**F value  
$r^2$ | 0.644  
Adjusted $r^2$ | 0.639

CONCLUSION

The findings of this study support those of earlier studies on customer perception which has a significant impact on customer purchase intention towards halal products. However, in terms of customer loyalty, the finding was contradictory where in this study the former does not determine purchase intention among non-Muslim customers. This is because non-Muslims are consuming both halal and non-halal products. Hence, they are not concerned with the type of product.

The findings of this study will help marketers improve their branding strategies in their distribution and communication efforts which target the growing halal food market segment among non-Muslims. Dissemination of information is important to ensure non-Muslims have a better understanding of halal principles. This study, however, has certain limitations. The sample size was small and future studies should focus on providing perspectives and educate people on Islamic branding or halal products which comply with the Sharia’ law to benefit everyone, especially since only a few studies focus on halal issues among non-Muslims.

REFERENCES


Purchase Intention of Islamic Brand Product


Element of Swine from the Perspective of Fiqh Ruling and Fatwa in Malaysia

Azri, B.1,*; Mohammad Mahyuddin, K.1; Luqman, A.2; Mohd Ashrof Zaki, Y.1; Mohd Dasuqkhi, M. S.1 and Mohd Solahuddin, S.1

1Academy of Contemporary Islamic Studies (ACIS), Universiti Teknologi MARA (UiTM), 40450 Shah Alam, Selangor, Malaysia
2Academy of Islamic Studies, Universiti Malaya (UM), 50603 Kuala Lumpur, Malaysia

ABSTRACT

Islam allows the use of medication sourced from haram (impure) substance, based on the dharurah situation. Jurist (fuqaha) have agreed to allow the use of such medication based on the prevailing dharurah where the situation is critical to preserve human life as proven by a physician. This paper focuses on the collection of the Discourse of the Fatwa Committee of Malaysian National Council for Islamic Religious Affairs regarding the use of swine between 1981 and 2012. An analysis is performed to examine whether all uses of swine are regarded as haram (prohibited) or there are exceptions. The study shows there are several fatwas that permit the use of swine based on dharurah method. It is obviously the easiest method to be applied in accordance with the spirit of Shariah which gives flexibility to its followers when facing complicated and demanding situation.

Keywords: Consumerism, dharurah, fatwa, halal, swine

INTRODUCTION

Islam is a way of life governed by rules and customs based on three main branches namely aqidah (belief), sharia (Islamic law) and akhlak (ethics and moral belief). Therefore, Muslims need to observe all rules ordained by Allah through shariah including food and dietary related matters. Muslims must follow a set of dietary laws intended to advance their well-being through the regulation of halal and haram.
The advancement and development of technology has made halal no longer a purely religious issue. The realm of halal may extend to all consumables such as on food industry, medicines and pharmaceuticals, services and daily usage including finance. Non-Muslims countries are dominating the trade of processed food and generally halal products. Therefore, issues crop up regarding use halal foods and products especially use of swine in food, medicines, clothing and equipment. Hence, there is a need to understand and to know the rulings in the current context in solving the problem of halal and haram pertaining to the issue of swine (Man, 2009).

It is estimated that 70% of Muslims worldwide follow halal standards (Minkus-McKenna, 2007) and the worth of global halal market was estimated at USD12 billion in 1999 (Riaz, 1999). It increased to USD150 billion in 2001 and currently is reported to be USD580 billion (Al-Harran & Low, 2008). According to Hussaini (1993), 75% of Muslims would follow their dietary rules in the United States, meaning that even after having migrated, most Muslims still choose halal products. Therefore, the halal aspect is now accepted as a quality system worldwide that appeals to both Muslims and non-Muslims as well (Ariff, 2009). Nowadays, Muslims are making their presence felt socially and politically and are requesting halal-certified products (Riaz & Chaudry, 2004; Shafie & Othman, 2006).

LITERATURE REVIEW

The Concept of Halal

The word halal describes anything that is considered permissible and lawful under Islamic law while haram is used to describe anything that is forbidden and punishable according to religion (Al-Qaradawi, 2007; Puziah 2011). The concept of halal in Arabic refers to permissible behaviour, speech, dress, conduct, manner and dietary intake whereas in the Malaysia context, the term is used specifically in relation to Muslim food, especially where meat and poultry are concerned. Halal products are those that are Sharia compliant, i.e. do not involve the use of haram ingredients, exploitation of labour or environment, and are not harmful or intended for harmful use. According to the Quran, the only foods explicitly forbidden are meat from animals that die naturally, blood, the meat of swine, and animals dedicated to other than Allah (either undedicated or dedicated to idols). However, a person is not guilty of sin in a situation where the lack of any alternative that creates a necessity to consume that which is otherwise unlawful (Quran 2: 173).

The dichotomy of halal-haram covers almost every aspect of life including food and dietary law. According to Al-Ba‘labakki (1999) in al-Mawrid, the word haram means “taboo, inviolable, sacred, holy, ill-gotten, sin, wrongdoing, offense” which denotes the opposite of halal. In addition, Islamic rulings encourage Muslims to avoid consumables that are doubtful. Such items are often referred to as shubhah which means doubtful or questionable. Food
falling into this category should be treated with precaution until it is ruled otherwise. In Islam, use of porcine derived products of any kind is prohibited. The jurists of the Standing Committee for Issuing Fatwas (Shaikh Abd al-Azeez ibn Baaz, Shaikh Abd al-Razzaaq Afeefi, Shaikh ‘Abd-Allaah ibn Ghadyaan, Shaikh ‘AbdAllaah ibn Qa’ood. Fataawa al-Lajnah al-Daa’imah (22/281)), noted that even if a Muslim is in doubt that the products to be used contain any pork, lard (pig fat), or ground up pig bones in food, medicine, toothpaste, and so on, then it is not permissible for him to eat it or drink it, or apply it to his skin. On the other hand, jurists also believe that in case of non-availability of some lifesaving medications, porcine products could be used.

Swine

Pork is the culinary name for meat of the domestic pig. It is one of the most commonly consumed meat worldwide with evidence of pig husbandry dating back to 5000 BC. The advancement of technology has resulted in the use of swine as an important component in biomedical research as they are excellent models for curing several important diseases. Improvements in the methods to make genetic modifications have enabled scientists to utilise pigs that are beneficial to humans in ways that were previously unimaginable. The benefits to medicine include pharmaceuticals, the provision of organs for xenotransplantation into humans, and the development of models of human diseases. Randall, Miaoda and Yifan (2008) show that the modifications of genes can change the swine so that it is a better model of human disease, that it produces pharmaceuticals, or that the health of the animal or consumer is improved.

The religions of Judaism and Islam, as well as several Christian sects, forbid pork consumption; the sale of pork is illegal in many if not most Muslim countries, and is severely restricted in Israel (the only country with a Jewish majority). In Arabic, swine is called khinzir. Meanwhile, in English, there are many terms used to define swine based on their parts, nature or certain functions (Rumaizi, 2009).

Table 1

Terms used to define swine based on the parts, nature or certain functions

<table>
<thead>
<tr>
<th>Term</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swine</td>
<td>General definition for a pig or a young pig of less than 50 kg.</td>
</tr>
<tr>
<td>Swine</td>
<td>The term for entire species of pig</td>
</tr>
<tr>
<td>Boar</td>
<td>The term for wild pig</td>
</tr>
<tr>
<td>Hog</td>
<td>The term for a fully-grown pig which weighs more than 50kg</td>
</tr>
<tr>
<td>Sow</td>
<td>The term for a fully grown female pig which is rarely used</td>
</tr>
<tr>
<td>Pork</td>
<td>The meat of a pig that is used for food.</td>
</tr>
<tr>
<td>Porcine</td>
<td>The term for something related to or derived from pork. The term is often used in the medical field to specify the use of resources derived from pigs.</td>
</tr>
<tr>
<td>Lard</td>
<td>A soft white substance that is made from the fat of pigs and used in cooking oil and soap.</td>
</tr>
<tr>
<td>Bacon</td>
<td>Thin strips of salted and smoked meat from the sides and the back of a pig</td>
</tr>
<tr>
<td>Ham</td>
<td>Meat from the leg of a hog that is often prepared by smoking or salting</td>
</tr>
<tr>
<td>Bristle</td>
<td>A short stiff coarse hair or filament</td>
</tr>
</tbody>
</table>

For the purpose of branding and marketing strategies, the manufacturer normally use the following in their products: “This product contains substance from Porcine” or “The source of the gelatine capsule is Porcine” or “Serve no pork”. Normally, these terms are used in the label of a product (Rahman, 2010).

**Quranic Rulings on Pork and Swine**

The prohibition of the pork was mentioned in the Holy Quran and it is based on four verses in the Quran which directly refers to the ruling of prohibition of pork, which are:

> “He has only forbidden to you dead animals, blood, the flesh of swine, and that which has been dedicated to other than Allah. But whoever is forced [by necessity], neither desiring [it] nor transgressing [its limit], there is no sin upon him. Indeed, Allah is Forgiving and Merciful”

(Quran 2: 173)

> “Prohibited to you are dead animals, blood, the flesh of swine, and that which has been dedicated to other than Allah, and [those animals] killed by strangling or by a violent blow or by a head-long fall or by the goring of horns, and those from which a wild animal has eaten, except what you are able to slaughter [before its death], and those which are sacrificed on stone altars, and [prohibited is] that you seek decision through divining arrows...”

(Quran 5: 3)

> “Say, I do not find within that which was revealed to me [anything] forbidden to one who would eat it unless it be a dead animal or blood spilled out or the flesh of swine - for indeed, it is impure - or it be [that slaughtered in] disobedience, dedicated to other than Allah. But whoever is forced [by necessity], neither desiring [it] nor transgressing [its limit], then indeed, your Lord is Forgiving and Merciful”

(Quran 6: 145)

Based on the above verses of the Quran, the jurists have the following rulings on pork and *najis* (impure) of swine.

**Ruling on pork.** Pertaining to the prohibition of pork, majority of the jurist think that all there is within a swine or of its descendant is *haram* or prohibited and that include pork, bones, lard, milk etc. (Al-Bakri, 2014). Al-Qurtubi explains that Allah SWT specifically mentions pork in the verses of Quran above to show the prohibition of entire swine, either slaughtered or not. It does not involve only lard, but also other parts (Al-Sabuni, 1987). Ibn Kathir stresses that Allah prohibits pork, either slaughtered or which has died on its own. Lard is usually included in rulings related to pork, or pork containing lard or through analogy.
The word pork covers all parts of swine, as understood by the Arabic language and according to custom (Alu Shaikh, 2008). However, there is an odd view of Zahiri school which stated that only pork is *haram* and not the entire parts of swine. This school reasoned that the verses of the Quran only focused on the *haram* part, namely pork. This suggests that fur, fat, skin and others from swine is *halal* to be used (Hammad, 2004).

**Ruling of impurity of swine.** The ruling regarding the impurity of swine is only found in one verse which is from al-An’am: 145 that explains swine are impure (*rijsun*). According to Al-Zuhayli (2002), jurist agreed on the impurity of pork even though the swine is slaughtered in the manner prescribed by Islam, as well as their hair, bones and skin even if the swine skin is being tanned (*samak*). *Samak* is the process of tanning or cleaning in the manner prescribed by Islam. However, according to Daud al-Zahiri and Abu Yusuf, the *samak* (tanned) swine skin is pure based on the generality of hadith of the Prophet SAW, “Any skin that is *samak* is pure” (Narrated by Tirmizi and Muslim). The use of the principle of dharurah and istihalah is a method and a way out by most jurists in response to this issue. The use of principle of dharurah is prevalent particularly among the jurists and usuliyyun (fundamentalists). It is reasoned as the best method with regard to this issue and only be considered after other methods and principles are deemed to be unsuitable. Normally, the jurists will use this principle as a last resort when dealing with such situations of difficulty.

**Application of Dharurah in Non-Halal Sourced Products**

The use of dharurah and istihalah principles allow scholars to solve halal issues. Normally scholars will use this principle as the last resort in demanding situations. Dharurah concept is usually discussed by scholars based on the theory of Maqasid al-Shariah and also qawaid fiqhiyyah. According to Maqasid al-Shariah, the purpose of all human beings is to be mukallaf (accountable) to shariah law for the good and benefit and prevent harm to human life (jalb al-masalih wa dar’ al-mafasid). The advantages and benefits known as masalih (plural *maslahah*) are categorised as dharuriyyah, hajjyyah and tahsiniyyah. The concept of dharuriyyah (essential) is usually discussed by the jurist in relation to the theory of Maqasid al-Shariah (objectives of shariah) along with the concept of hajjyyah (complementary) and tahsiniyyah (embellishment). The principle of dharuriyyah is a fundamental element of human life that ensures the stability of man’s life. The principle of hajjyyah emphasises on the need for flexibility in certain aspects of life. The principle of tahsiniyyah is an element of complementary quality of human life and its absence is essentially not to ruin man’s lives.

There are five things under the principle of dharuriyyah that need to be preserved and maintained in human life, namely: i) preservation of religion (hifz al-din); ii)
preservation of lives (hifz al-nafs); iii) preservation of intellect (hifz al-aql); iv) maintaining the descendants (hifz al-nasal); and v) safeguarding assets (hifz al-mal).

Each of these is guaranteed its preservation in Islam through the *shariah* either from the aspect of creation (ijad wa tahqiq) or prevent it from loss (muṭafazah li-ibqa’). Thus, in the context of discussions on the issue of drug sourced from non-*halal* ingredient, the permission is given based on principle of preservation of life. Islam allows consumption of non-*halal* ingredients in order to save lives based on the Quran:

"He hath only forbidden you dead meat, and blood, and the flesh of swine, and that on which any other name hath been invoked besides that of Allah. But if one is forced by necessity, without wilful disobedience, nor transgressing due limits, - then is he guiltless. For Allah is Oft-forgiving Most Merciful"  
(Quran 2: 173)

"But if any is forced by hunger, with no inclination to transgression, Allah is indeed Oft-forgiving, Most Merciful"  
(Quran 5: 3)

"Say: “I find not in the message received by me by inspiration any (meat) forbidden to be eaten by one who wishes to eat it, unless it be dead meat, or blood poured forth, or the flesh of swine, - for it is an abomination - or, what is impious, (meat) on which a name has been invoked, other than Allah’s”. But (even so), if a person is forced by necessity, without wilful disobedience, nor transgressing due limits, - thy Lord is Oft-forgiving, Most Merciful”  
(Quran 6: 145)

In the event of absence of *halal* food, it is compulsory to consume non-*halal* food to survive and is regarded as sinful if neglected. According to Sheikh ‘Abd Allah al-Munajjid, if someone dies as a result of avoiding non-*halal* food during *dhawrah* (emergency), he will be put in hell. Thus, taking non-*halal* sourced medication in the absence of *halal* drug is similar to this situation as it is part of preservation of life. According to tartib al-maqasid (level of priority of maqasid), *dhawrah*-related matter should be given priority than other *maslahah* (hajjiyah and tahsiniyyah), such as drinking alcohol, which is allowed in urgent situations (if one is threatened with murder) because lives must be preserved. The application of *maslahah dharuriyyah* need to be observed by those with expertise such as the physician and jurist due to the element of *maslahah*, seen as qat’iyyah (definite) whose authenticity must be confirmed by an expert (ra’y al-khabir) (Al-Zuhayli, 2002).

With reference to The Majelle or known as Al Majallah Al-Ahkam Al-’Adaliyyah, the Ottoman codification of Islamic law, there
are several maxims of Qawaid al-Fiqhiyyah applicable in ensuring the preservation of life, which can be summarised as follows:

(1) Ad-dararu yuzal/ Damage is put an end to (Art 20 of The Majelle). This maxim applies to harmful diseases which need to be eliminated (Abdul Karim, 1987).

(2) Ad-darurah tubih al-mahzurat/ Necessity renders prohibited things permissible (Art 21 of The Majelle). This maxim is particularly relevant and closely related to preservation of life. The absence of halal medicine for critical illnesses is a form of dharurah and requires treatment using haram based medication for preserving life.

(3) Yuzal ad-darar al-ashaddu bid-darar al-akhaff/ A greater harm is eliminated by means of a lesser harm (Art 27 of The Majelle). This maxim is applicable when there are two types of haram based medication available, where one is lighter compared with the other.

(4) Ad-darurah tuqaddaru bi-qadari-ha/ Dharar is measured in accordance with its true proportion (Art 22 of The Majelle). This maxim is relevant from the point of consumption of illegal drugs where it is required to save life as prescribed by physicians. Any consumption more than the permissible limits is illegal and sinful.

(5) Al-Mashaqqah tajlib al-taysir/ Hardship begets facility (Art 17 of The Majelle). This maxim is applied in the absence of halal medicine which reflects difficulties (mashaqqah) in the lives of Muslims. Difficulties begets flexibilities and hence, flexibility should be given to patients suffering from pain and difficulties to obtain the halal medication.

(6) Iza daqa al-amr ittasa’a/ Latitude should be afforded in the case of difficulty (Art 18 of The Majelle). Difficulties within this context can be interpreted with limitation of available halal medication, thus, requiring a shift from halal to the use of haram sourced medication.

(7) La yajuzu irtikab ma yashuqu ‘alan nafs/ Can’t do anything incriminating to oneself. This maxim is applied since no one is allowed to distress or cause difficulties to him/herself by restrain from using haram based medication. Thus, the permission to use haram based medication is a way out to refrain themselves from trouble and pain.

An analysis on principle of Maqasid al-Shariah and qawaid al-fiqhiyyah clearly shows the use of haram based medication and drug is not prohibited in Islam as it is based on the principle of dharurah as long as there is no other alternative. Treatment that is seen as not reaching the level of
dharurah such as Botox injections for beauty purposes, sourced from swine, are prohibited since it is at the level of tahsiniyyah, especially when it is done with the intention of riya’ (ostentation) and bad intention.

Application of Istihalah in Non-Halal Sourced Products

Istihalah is defined by the fuqaha as a process of change or transformation of a material to another with different nature, substance and name (Abu Jayyib, 1988; Mohammad Aizat, 2011; Nazih 2004; Qal’ahji, 1996). There are two views on this. The first is a strict view of Shafie and Hanbali schools who restrict the istihalah application on some cases, namely wine turns into vinegar, blood of deer turns into the blood of musk deer, tanned animal skin and animals that exist from the faeces of animals (such as worms). The second view of majority of jurists allow istihalah to be applied in any circumstances and not limited to certain cases. In modern application, most scholars allow the application of istihalah in producing medication sourced from non-halal substance. This can be seen from some of the rulings and opinions issued concerning insulin, gelatine and other drugs sourced from pork elements. Their views are based on the evidence from scientists and medical experts stating that the material derived from swine that have been extracted and processed through the various stages of processing up to its chemical structure has changed completely.

Al-Qaradawi, in his book Fiqh al-Taharah, explains and authenticates view of majority of jurists on this issue in allowing application of istihalah in any circumstances. The basis of his view is that when something has changed, either natural or man-made processes or chemical changes (taghayyur kima’i) to produce other substances with different name and attributes, the law is changed by its nature. According to this view, the application of istihalah conforms to the principles of shariah that emphasises lightness and flexibility in the daily lives of Muslims. However, the main condition emphasised by most jurists is that the transformation in istihalah occurs as a whole and not in part. If istihalah happens in part and leaving the original substances intact, the item is deemed to be impure and that istihalah is not considered valid.

The application of istihalah in Malaysia is not widely accepted, for example, the meningitis vaccines were rejected by Fatwa Committee of Malaysian National Council for Islamic Religious Affairs which adopted Shafie view on istihalah which does not permit its application on medicine. Although the Fatwa Committee of Malaysian National Council for Islamic Religious Affairs does not bound with any mazhab in determining the fatwa, the view of Shafie school is preferred. Furthermore, there are other methods to resolve this problem, namely the use of the principle of dharurah which is agreed upon by all jurists, in contrast to the application of istihalah. Hence, it does not pose any problem as long as the principle of dharurah can be used.
ANALYSIS AND FINDING

There are few fatwas relating to use of swine products that have become guidance for Muslims in Malaysia in line with issues and problems that arise from time to time. Below is an analysis of fatwas relating to swine by the Discourse of the Fatwa Committee of Malaysian National Council for Islamic Religious Affairs or Muzakarah Jawatankuasa Fatwa Majlis Kebangsaan Bagi Hal Ehwal Ugama Islam Malaysia (the Discourse). There were nine fatwas issued on this between 1981 and 2012.

### Ruling on the Use of Animal Bone Ashes (Bone China) in the Production of Household Goods and Ornament

The 99th Discourse convened on 4-6 May 2012 decided that according to Shafie school, the original substance of najis in swine remains intact in bone china products and this substance will never disappear, as the process of istihalah (transformation) never occurred. The Discourse viewed that it is not a necessity (dharurah) for the society to use and own household goods and ornaments made from bone china. Therefore, the Discourse decided the use of household goods and ornaments made from

### Table 2

<table>
<thead>
<tr>
<th>No.</th>
<th>Title of Fatwa</th>
<th>Discourse</th>
<th>Ruling</th>
<th>Decision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ruling on the Use of Animal Bone Ashes (Bone China) in the Production of Household Goods and Ornaments</td>
<td>99th Discourse</td>
<td>Haram (Prohibited)</td>
<td>4-6 May 2012</td>
</tr>
<tr>
<td>2</td>
<td>Contamination of Pork DNA in Halal-Certified Food Product</td>
<td>96th Discourse</td>
<td>Permissible</td>
<td>13-15 October 2011</td>
</tr>
<tr>
<td>3</td>
<td>The Ruling on Usage of BioThrax and RotaTeq vaccines which Use Elements of Swine</td>
<td>81st Discourse</td>
<td>Haram (Prohibited)</td>
<td>31 March 2008</td>
</tr>
<tr>
<td>4</td>
<td>Biotechnology in Food and Beverages</td>
<td>Special Discourse</td>
<td>Haram (Prohibited)</td>
<td>12 July 1999</td>
</tr>
<tr>
<td>5</td>
<td>The Use of PSH-P Hormone (Swine Brain) as Culture Improvement Material</td>
<td>39th Discourse</td>
<td>Haram (Prohibited)</td>
<td>21 September 1995</td>
</tr>
<tr>
<td>6</td>
<td>The Use of Swine Bristle</td>
<td>12th Discourse</td>
<td>Haram (Prohibited)</td>
<td>22-23 January 1985</td>
</tr>
<tr>
<td>7</td>
<td>The Injection of Highly Purified Insulin from Swine</td>
<td>6th Discourse</td>
<td>Permissible</td>
<td>10 October 1983</td>
</tr>
<tr>
<td>8</td>
<td>Fertiliser from Swine Manure</td>
<td>2nd Discourse</td>
<td>Permissible but Makrooh (Disliked)</td>
<td>12-13 May 1981</td>
</tr>
<tr>
<td>9</td>
<td>Gas from Swine Manure</td>
<td>2nd Discourse</td>
<td>Haram (Prohibited)</td>
<td>12-13 May 1981</td>
</tr>
</tbody>
</table>

*Source: Keputusan Muzakarah Jawatankuasa Fatwa Majlis Kebangsaan Bagi Hal Ehwal Ugama Islam Malaysia (2009)*
non-halal animal bone ashes (bone china) including those made from halal and edible animals which have not been slaughtered according to shariah principles, are not permissible. However, household goods and ornaments made from animal bone ashes (bone china) that are halal and edible, and have been slaughtered according to shariah principles are permissible. Fatwa reviews:

1. The bone china products are increasingly used by the Muslim consumers in Malaysia for household goods and ornaments. The products are categorised as pottery products which are of high quality and are commonly used as jewellery.

2. Most of the consumers assume that the animal bone ashes whether it they are of halal origins or otherwise, have undergone the process of istihalah (transformation of unclean substances to other material). This final material that have go through both processes are regarded to have undergone istihalah process according to the Hanafi and Maliki schools due to transformation in name, original materials and physical substances to the new materials (bone ashes powder containing oxide and calcium phosphate).

3. Istihalah process could be applied in the production of bone china according to the Hanafi and Maliki jurists as well as others, thus it makes this product halal and can be used by consumers. Both schools are of the view that any non-halal substance that has changed its nature and character are no longer haram as it has transformed to new materials with different names, nature and characters.

4. According to Shafie and Hanbali schools, the swine element entrenched in bone china products will not be vanished. They opine the istihalah process does not fully transform the haram substance as it will remain intact. If the use of istihalah is allowed, it is feared it will lead to use of other haram-sourced products.

5. Use of bone china products are not a necessity (dharurah) as only the rich can afford it. Furthermore, bone china products do not attain the level of dharurah for the consumers to own and use them. In fact, Malaysian Muslims are customarily sensitive to swine-based products in daily use. According to the experts, elements of swine remain intact and not destroyed through a combustion process since quality bone china product depends on the use of animal bones. If the bone ashes are replaced with trees ashes, the result is a lower quality product.
Contamination of Pork Deoxyribonucleic Acid (DNA) in Halal-Certified Food Product

The 96th Discourse convened on 4-6 May 2012 based its views on scientific review of contamination of Pork Deoxyribonucleic Acid (DNA) in Halal certified food product in providing a shariah-based solution:

1. After a brief explanation from Dr. Yaakob Che Man and Dzulkifly Mat Hashim of Universiti Putra Malaysia, it was revealed there was lack of research to identify whether the contaminated Pork DNA are in natural or synthetic form and to what extent the contamination occurs.

2. However, in general, the DNA contamination can occur easily through the air unwittingly or unknowingly and scientists believe it is very difficult to prevent such contamination from occurring.

3. For processing material and equipment that has been through the process of tanning as prescribed by shariah with monitoring / supervision by religious authorities, but later found to contain Pork DNA, the Discourse decided that the former tanning process is sufficient and does not need to be repeated.

4. This decision is based on shariah principle that individual responsibility does not exceed his capacity as Allah mentioned in the Quran, “Allah intends for you ease and does not want hardship for you,” (al-Quran 2: 185).

The Ruling on Using Biothrax Vaccine and RotaTeq Vaccine that Used Swine Sources in its Production Process

The 81st Discourse held on 31st March 2006 has decided that the usage of Biothrax vaccine and RotaTeq are not permitted because there is no urgent need at the moment and there are alternative substances or medicines to using swine sources in the production of the said vaccines. There is also no concrete proof that people in the country are in dire need of such vaccine. According to the Fatwa reviews:

1. Anthrax is an acute infectious disease and can cause sudden death with blood oozing out of all the open cavities. Anthrax infection can occur either on the skin (cutaneous anthrax), intestinal tract (gastrointestinal anthrax) or through breathing (inhalation anthrax). BioThrax vaccine is used as immunisation or vaccination to help protect against anthrax infection. RotaTeq is the vaccine used for the prevention of rotavirus cases that cause vomiting and diarrhoea among young children.

2. Islam allows treatment with banned objects in cases of emergency and if there is no alternative medicine. Majority of jurists of the Hanafi and Maliki as well as Shafie and Hanbali schools believe alcohol is
Food and Drink Biotechnology

The Special Discourse held on 12th July 1999 discussed biotechnology used in manufacturing food and drinks. It was decided that products, food and drinks processed through swine DNA biotechnology is contradictory to Islamic law and it is forbidden. Using swine DNA bio-technology in products, food and drink manufacturing are not considered al-darurah (necessity) as there are still other alternatives available. This ijtihad (diligence) is based on the maxim “The repelling of evil is preferred to the acquisition of benefits (Art 30 of The Majelle) or “dar-ul mafasid muqaddam ‘ala jalaba al-masalih”. Fatwa reviews:

1. DNA is a chain Deoxi acid-ribonucleotide, which is what is called a nucleotide - A, G, C and D. A is Adenine, G is guanine, C is cytosine and T is thymine. The combination of the four A, G, C and T is used as a DNA chain. Chain or genetic information is copied and then translated into proteins.

2. According to the method of Usul al-Fiqh (Islamic jurisprudence) “Origin is a matter that must be lawful and an unlawful origin is haram. When mixed with something that is haram halal whether many or few, it is haram”.

3. In the process of DNA biotechnology, as long as the ingredients are pork protein in the host or home or cell overlaps into the seed either to humans, animals or plants for the purpose of reproduction and fertility, then he should not be punished because of dietary ingredient is pork stool weight. The use of Art 30 of The Majelle is a good fit in the cell or gene transfer issues of swine through biotechnological processes.

The Use of the PSH-P Hormone (Made from Swine Brain) as Livestock Breeding Stimulant

The 39th Discourse held on 21st September 1995 discussed the Use of the PSH-P Hormone (Made from Swine Brain) as a Livestock Breeding Stimulant. The Conference of the Fatwa Committee decided that the PSH-P Hormone (made from swine brain), a breeding stimulant processed from the swine’s brain, is deemed as a severe impurity (najis al-mughallazah) and haram to be used in any form whether for breeding purposes or others. This ruling is due to its Shubhah status. Offspring of livestock produced through the use of the
PSH-P Hormone (made from swine brain) is *haram* including its meat and milk. The Department of Veterinary Services must stop injecting the PSH-P Hormone onto lawful (*halal*) livestock for purposes of breeding and others. According to the *Fatwa* reviews:

1. Hormonal methods of using PSH-P (Swine Brain) is intended for breeding research by western scientists since the 1930s and poultry farmers have begun using this formula again with success.

2. PSH-D hormone is extracted from the pituitary gland organ in the brain of swine in which the hormone produced PSH. By using a specific process, this hormone is inserted into the cow’s body for more “quike” allowed through her womb.

3. These hormones are not only available from swine, it can also be obtained from other animals as dietary ingredients such as hormone replacement rabbits and so on. If plants are fertilised with swine manure, it does not contribute to the fruiting but is continuously processed through the roots. While hormone of swine when injected into blood, it will hold on to the foetus and this is definitely a difference.

4. According to the Shafi’i and Hanbali sects, buying and selling swine, carcasses, blood, alcohol and the likes which are unclean thing is not acceptable as per the Hadith of the Prophet: “Allah S.W.T and His Messenger banned the sale and purchase of wine, carcass, swine and idols”. PSH-D hormone derived from swine brain is odious and illegitimate mughallazah used in any form.

**The Use of Swine Bristle**

The 12th Discourse held on 22nd-23rd January 1985 discussed the use of swine hair. The Discourse decided that the use of brushes made from swine hair is *haram*. In a situation where, one is unsure as to whether a brush is made of swine hair or not, its use is permitted. The *fatwa* clearly forbids the use of tools made from members of the body excretes as the consensus of the jurist of the law on defilement pork slaughtered according to Islamic way is still considered unclean, as well as feathers, bones and even his skin has been tainted.

**Injection of Highly Purified Insulin Derived from Swine**

The 6th Discourse held on 10th October 1983 discussed injection of highly purified insulin derived from swine. The Discourse has decided that injecting highly purified insulin derived from *najs al-mughallazah* (swine) as medication for diabetics is permissible on the basis of emergency. The ruling is applicable to the person who administers the injection.
Manure Made of Swine’s Excrement
The 2nd Discourse held on 12th-13th May 1981 discussed the use of Manure Made of Swine’s Excrement. It has been decided that based on the evidence from the above-mentioned book, the Discourse decided that manure made of swine’s excrement is najs al-mughallazah and its ruling on using it as a fertiliser is permitted but makrooh (undesirable). Chicken feed made from processed ingredients mixed with impurities such as cow’s blood, swine’s blood and others are permitted or halal.

Gas from Swine’s Excrement
The 2nd Discourse held on 12th-13th May 1981 discussed the use of Gas Made from Swine’s Excrement. The Discourse has decided that the gas processed from swine’s excrement using fire is impure (najs) and is pure if not processed using fire.

CONCLUSION
In conclusion, it is certain the swine is harm regardless whether it involves the meat, lard, skin and others. This view is supported by jurist from schools of thought, contemporary jurists as well as the jurist and experts in Malaysia. Based on the analysis done on the eight fatwas regarding the issues of swine, it seems that not all fatwas prohibition. There are five fatwas which consider pork prohibited and another three regard it harus or permissible. In the fatwa relating to injection of highly purified insulin derived from swine, it is permissible due to dharurah. This flexibility happens in the desperate situation which uses the concept of dharurah. Besides, fatwa on the use of manure from swine excrement is also decided as permissible due to istihalah. Thus, the findings of the fatwa analysis regarding the swine issued by the Discourse from the year 1981-2012 have helped to resolve the problems within the Muslim community in Malaysia.

REFERENCES
Element of Swine from the Perspective of Fiqh Ruling and Fatwa


The Role of Ar-Rahnu’s Benefits – Sacrifices Exchange towards Relationships between Customers and Islamic Financial Institutions

Rafidah Mohd Azli1,2,*, Mohd Rizal Pali1, Shifa Mohd Nor4, Mohamad Abdul Hamid5 and Zainudin Awang6

1 Academy of Contemporary Islamic Studies (ACIS), Universiti Teknologi MARA (UiTM), 72000 Kuala Pilah, Negeri Sembilan, Malaysia
2 Institute of Malaysian and International Research (IKMAS), Universiti Kebangsaan Malaysia (UKM), 43600 Bangi, Selangor, Malaysia
3 School of Accounting, Universiti Kebangsaan Malaysia (UKM), 43600 Bangi, Selangor, Malaysia
4 School of Management, Universiti Kebangsaan Malaysia (UKM), 43600 Bangi, Selangor, Malaysia
5 Universiti Islam Malaysia (UIM), 63000 Cyberjaya, Malaysia
6 Faculty of Economics and Management Sciences, Universiti Sultan Zainal Abidin (UNISZA), 21300 Kuala Terengganu, Terengganu, Malaysia

ABSTRACT

The first Ar-Rahnu (Islamic pawn broking) shop was established in Terengganu, Malaysia in 1992. However, the role of exchange between benefits and sacrifices in Ar-Rahnu transaction as a determination of its development has not been given much emphasis in Malaysia. Therefore, this paper explores a new perspective of Ar-Rahnu especially focusing on its benefits and sacrifices. Several studies have highlighted the benefits-sacrifices exchange (BSX) to be the determinant of customer demand. The BSX in Ar-Rahnu transaction proposes a new conceptual framework to investigate the effects of its usage. This paper provides a new insight into these constructs by introducing the Social Exchange Theory (SET). Two hundred and six respondents were selected to answer a set of questionnaires. The Factor Analysis found that the dimension of benefits and sacrifices in Ar-Rahnu is fit to be analysed using SEM using Amos. This paper suggests that BSX in Ar-Rahnu transaction produce a significant effect on the Ar-Rahnu customer-pawnbroker trust and long-term relationship.

Keywords: Ar-Rahnu, benefits, Islamic pawn broking, sacrifices, Social Exchange Theory

ISSN: 0128-7702 © Universiti Putra Malaysia Press
INTRODUCTION

Ar-Rahnu or Islamic pawn broking is known as one of the microfinance products that is designed to help the poor. Muslims in Malaysia have undergone an evolution in their lifestyle and since the 1980s, they begun to seek interest-free loans from Shariah-compliant financial institutions such as Bank Islam Malaysia Berhad and Bank Muamalat Malaysia Berhad. The Ar-Rahnu principle and interest-free banking system have grown rapidly resulting in the introduction of Ar-Rahnu system of pawn-brokering that provides an alternative source of credit from conventional pawn shops. An example of Ar-Rahnu service provider is Bank Rakyat, the biggest and the most flourishing cooperative in Malaysia that currently operates hundreds of Ar-Rahnu outlets (Yaacob, Ahmad, & Ibrahim, 2012). Malaysian Islamic Economic Development Foundation (YAPEIM) and Malaysian Post Office are the biggest non-banking Ar-Rahnu institutions in Malaysia. In addition, several Islamic banks offer Ar-Rahnu services, such as Bank Islam Malaysia Berhad (BIMB), Bank Kerjasama Rakyat (Bank Rakyat), Agrobank, Bank Muamalat Malaysia Berhad (BMMB) and Affin Islamic Bank. In recent years, Ar-Rahnu has seen rapid growth and development. However, the determinants of its development in terms of social exchange between customers and institutions have not been explored in Malaysia.

The objective of this paper is to contribute towards a new model of relationship value between benefits and sacrifices in the context of Ar-Rahnu transaction. This model is based on the Theory of Social Exchange (SET) (Blau, 1964) which has been widely used in marketing studies. For instance, Jinyang (2015) used SET to assess shared knowledge among the virtual community. Khalid and Ali (2016) have interpreted the impact of values exchanged on customers’ trust in international joint venture by using SET. Priporas, Stylos, Rahimi and Vedanthachari (2017) used SET in order to examine the customers’ perception towards service quality in Airbnb Company. Therefore, SET is a relevant theory to examine the determinant factor of Ar-Rahnu business development (Azli, Palil, & Nor, 2016). Past research on Ar-Rahnu business suggests an unproven research framework with any relevant theory related to social change. Hence, research should be conducted to examine the effects of benefits and sacrifices with their dimensions in Ar-Rahnu study. In previous studies, the Ar-Rahnu benefits and sacrifices were dimensioned using Principal Component Analysis (PCA) in SPSS 21.0 (Azli et al., 2016). This analysis not only confirms the benefits of Ar-Rahnu, namely quality services, staff competency, transparency, business capital, gold investment, and product feature, but also the sacrifices of Ar-Rahnu customers, namely price cost, time cost, and additional cost (Azli et al., 2017).

This study has two objectives: (1) to examine the effect of Ar-Rahnu benefits on the relationships between customers and Islamic financial institutions; and (2) to investigate the effect of sacrifices borne by the customers on Ar-Rahnu relationships.
The Role of BSX on Ar-Rahnu Relationships

Theoretical Framework

This paper looks at the impacts of benefit dimensions (i.e., quality services (SQ), staff competency (C), transparency (TR), business capital (BS), gold investment (GI), and product features (PF)) and sacrifices dimension (i.e., time cost (TC) and additional cost (TRC)) on customers’ trust and long-term relationship.

The construct of benefits and sacrifices is derived from the concept of Relationship Value. The concept of Relationship Value is one of SET’s approach. It is a body of knowledge which has attracted marketing researchers in marketing. Ulaga and Eggert (2005) defined Value as trade-off between benefits and sacrifices among the customers. Benefit is defined as any advantage given to customers and sacrifice means any cost or burden borne by the customers in a market exchange.

The dimensions of Ar-Rahnu benefits are derived from past literature. Service quality (Hamid, Rahman, & Halim, 2014), staff competency (Yaacob et al., 2012), transparency (Abdul-Razak, 2011), business capital (Noar & Ahmad, 2015), gold investment (Hisham, Shukor, Salwa, & Jusoff, 2013), and product features (Sharif, Shaharuddin, & Muhamed, 2015) are considered as determinants of customers’ demand on Ar-Rahnu. In this paper, these determinants are conceptualized as benefits.

The dimensions of sacrifices in Ar-Rahnu such as time cost and additional cost are derived from business marketing studies (Hapsari, Clemes, & Dean, 2016; Ulaga & Eggert, 2005).

Studies prove that exchange between benefits and sacrifices has an impact the relationship between customers and business institutions (Pihlstrom, 2008). In the context of Ar-Rahnu, it is imperative to examine the impact of benefits and sacrifices exchange (BSX) towards customers’ long-term relationship and trust.

The long-term relationship between Ar-Rahnu customers and institutions can have an impact on interpret the sustainability and competitiveness of Ar-Rahnu business and industry in Malaysia. A long-term relationship is defined as a perception of the interdependence of outcomes which both contracting parties are expected to benefit in the long run. Both contracting parties focus on achieving current and future outcomes (Ganesan, 1994). The concept of long-term relationship has been tested in various business relationships such as between the buyer and seller, between firms, between policy holders and insurance company, family business, and international joint venture (Brigham, Lumpkin, Payne, & Zachary, 2014; Cannon, 2010; Powers & Reagan, 2007; Ryu, Park, & Min, 2007; Shi, Shi, Chan, Liu, & Fam, 2011; Wang, Siu, & Barnes, 2008).

Trust is defined as the relationship whereby one party has confidence in or relying on another party to fulfil its obligations (Ganesan, 1994). Trust is necessary for parties to reduce the risk of opportunistic behaviour and transaction costs. The concept of trust in business-to-business and business-to-customer has been tested by Luo (2002), Morgan and Hunt...
(1994), Aryee, Budhwar and Chen (2002), Wasti and Wasti (2008), and Eastlick, Lotz and Warrington (2006). In Ar-Rahnu, trust has a major impact on certain benefits (Azmi, Hussin, & Basiruddin, 2015). The customers have to pledge their gold items at the Islamic bank counters. The trustworthiness of the Islamic banks pawnbroker is related to the safety of the gold, low and fixed storage fee, and the Shariah compliance of the contract. The research framework in Figure 1 shows the causal relationships between the constructs.

![Figure 1. Theoretical framework of the study](image)

**Hypotheses Development**

Past studies have shown the relationship between benefits and sacrifices exchange (BSX) and customers’ trust and long-term relationship. For instance, Amin, Isa and Fontaine (2013) found that Muslim customers establish a relationship with Islamic banking because they trust that it is Shariah compliant. This finding indicates that the customers get Shariah compliant products as the benefit which impacts on their trust in Islamic banking. Butt and Aftab (2013) opined that trust is an indicator of customer confidence in the quality of service provider. They found that service quality influences the customers’ attitude toward Islamic banking and customer satisfaction is positively associated with customers’ trust. This finding indicates that service quality can be regarded as a benefit for customers. But the impact of service quality as the benefit has not been tested on customers’ trust and long-term relationship. A marketing study also identifies the multi-dimensional BSX that gives impacts on business relationship. The construct of benefits is dimensioned into product benefits, service benefits, know-how benefits, time-to-market benefits, and social benefits (Ulaga & Eggert, 2005). In Ar-Rahnu, the impact of multi-dimensional benefits has not been tested. Hence, the following hypotheses are proposed:

**H1:** The benefits of Ar-Rahnu have a positive and significant effect on long-term relationship with their customers.

**H2:** The benefits of Ar-Rahnu contribute a positive and significant effect on customer trust.

The Exploratory Factor Analysis (EFA) by Azli et al. (2016) has produced two dimensions of sacrifices in Ar-Rahnu transaction namely, the transaction cost in terms of time and additional cost. The transaction cost of Ar-Rahnu has been discussed in earlier studies (Amin, Chong, Dahlan, & Supinah, 2007; Azman, Hadiyan, & Kassim, 2014; Hamid et al., 2014; Hussin, Zulkephy, Razak, & Muhammad, 2016; Mohamad & Salleh, 2008; Sharif et al., 2015). So, it is very important to hypothesise the impacts of sacrifices made...
The Role of BSX on Ar-Rahnu Relationships

by customers towards their relationship and trust on Islamic financial institutions.

\[ H_3: \text{The sacrifices of Ar-Rahnu have a significant effect on customers' trust.} \]

\[ H_4: \text{The sacrifices of Ar-Rahnu have a significant effect on the long-term relationship between customers and financial institutions.} \]

MATERIALS AND METHODS

In order to verify and test the hypothesis, a set of self-administered questionnaires were administered on two hundred and six (206) Ar-Rahnu customers. The respondents were selected randomly from seven financial institutions in Malaysia. These seven financial institutions were sole Ar-Rahnu service providers in the central zone of Peninsular Malaysia. The data collection was held between January and April 2016.

Reliability and Validity Analysis

The Confirmatory Factor Analysis (CFA) procedure using IBM-SPSS-Amos 21.0 was utilised to validate the measurement model of the latent constructs in the study. The construct validity needs to be assessed using three categories of Fitness Model, namely Absolute Fit, Incremental Fit and Parsimonious Fit. The Absolute Fit measured using RMSEA should be lower than 3.0, the Incremental Fit measured using CFI should be close to 0.9, and the Parsimonious Fit measured through Normed Chi Square should not exceed 0.08 (Awang, 2015; Awang, Afthanorhan, & Mamat, 2016a; Awang, Afthanorhan, Mohamad, & Asri, 2016b; Hoque & Awang, 2016; Kashif, Samsi, Awang, & Mohamad, 2016). The Convergent Validity is achieved through the Average Variance Extracted (AVE) and the value should exceed 0.5 (Awang, 2015; Awang et al., 2016a, 2016b; Hoque & Awang, 2016; Kashif et al., 2016). Another assessment under CFA is Composite Reliability or CR, and this value should exceed 0.6. The Validity and Reliability assessment for the constructs are shown in Table 1, Table 2 and Table 3.

From Table 1, the Construct Validity is achieved when the Absolute Fit index of RMSEA is below 0.08, The Incremental Fit index of CFI is close to 0.9, and the Parsimonious Fit of Normed Chi-Square is below 3.0.

From Table 2, the Convergent Validity for all constructs is achieved where AVE values for all constructs exceeded 0.5. Meanwhile, the Construct Reliability is achieved when both AVE and CR exceeded 0.5 and 0.6 respectively.

Table 1
The Construct Validity assessment for BSX model

<table>
<thead>
<tr>
<th>Index Categories</th>
<th>Name of Indexes</th>
<th>Index Values</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Absolute Fit</td>
<td>RMSEA</td>
<td>0.069</td>
<td>Index achieved</td>
</tr>
<tr>
<td>2. Incremental fit</td>
<td>CFI</td>
<td>0.885</td>
<td>Index achieved</td>
</tr>
<tr>
<td>3. Parsimonious Fit</td>
<td>Chisq/df</td>
<td>1.973</td>
<td>Index achieved</td>
</tr>
</tbody>
</table>
Table 2
The Composite Reliability and Average Variance Extracted for all constructs

<table>
<thead>
<tr>
<th>Construct</th>
<th>Items</th>
<th>Factor Loading</th>
<th>CR</th>
<th>AVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benefits</td>
<td>Service Quality (SQ)</td>
<td>0.78</td>
<td>0.880</td>
<td>0.554</td>
</tr>
<tr>
<td></td>
<td>Dharuriyyah Needs (DHA)</td>
<td>Deleted</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gold Investment (GI)</td>
<td>0.61</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Competency (C)</td>
<td>0.85</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transparency (TR)</td>
<td>0.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Product Features (PF)</td>
<td>0.79</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Business Capital (BS)</td>
<td>0.65</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hajjyyah Needs (HAJ)</td>
<td>Deleted</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sacrifices</td>
<td>Additional Cost (TRC)</td>
<td>0.81</td>
<td>0.813</td>
<td>0.686</td>
</tr>
<tr>
<td></td>
<td>Time Cost (TC)</td>
<td>0.84</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Price Cost (P)</td>
<td>Deleted</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trust</td>
<td>I have a good reason to put my trust on Ar-Rahnu. (TRT1)</td>
<td>0.85</td>
<td>0.938</td>
<td>0.752</td>
</tr>
<tr>
<td></td>
<td>I do not have any doubt establishing a relationship with Ar-Rahnu institution. (TRT2)</td>
<td>0.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>I can depend on Ar-Rahnu institution regarding gold price. (TRT3)</td>
<td>0.88</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ar-Rahnu staff show concerns regarding my needs. (TRT4)</td>
<td>0.88</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ar-Rahnu staff gives a good response towards my inquiries. (TRT5)</td>
<td>0.92</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long-term Relationship</td>
<td>My relationship with Ar-Rahnu institution is a long-term basis. (LT1)</td>
<td>0.95</td>
<td>0.849</td>
<td>0.740</td>
</tr>
<tr>
<td></td>
<td>My relationship with Ar-Rahnu institution is nearly automatic. (LT2)</td>
<td>Deleted</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>My relationship with Ar-Rahnu institution is a long-term agreement. (LT3)</td>
<td>0.76</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ar-Rahnu fast cash can almost fulfil my financial needs. (LT4)</td>
<td>Deleted</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 3
Discriminant Validity assessment

<table>
<thead>
<tr>
<th>Construct</th>
<th>Benefits</th>
<th>Sacrifices</th>
<th>Trust</th>
<th>Long-term Relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benefits</td>
<td>0.744</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sacrifices</td>
<td>-0.20</td>
<td>0.823</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trust</td>
<td>0.62</td>
<td>0.00</td>
<td>0.867</td>
<td></td>
</tr>
<tr>
<td>Long-term Relationship</td>
<td>0.60</td>
<td>0.02</td>
<td>0.84</td>
<td>0.860</td>
</tr>
</tbody>
</table>
From Table 3, all constructs in the BSX model have achieved the Discriminant Validity when every diagonal value is greater than the values in its rows and columns. The diagonal values are the square root of AVE for the respective construct, while other values are the correlation between the respective construct and any other construct in the BSX model.

RESULTS

After the CFA procedure has been completed and all constructs achieved the Construct Validity, Convergent Validity, Discriminant Validity and Composite Reliability, the next step was to model all constructs via Structural Equation Modeling (SEM) to test the hypotheses. This study simplified the complicated model comprising the second order model with many items into first order model with items compressed into their respective components. The structural model of compressed items is presented in Figure 2.

$H_1$: Ar-Rahnu contributes a positive and significant effect on customers’ long-term relationship.

Table 4
The regression path coefficient and its significance

<table>
<thead>
<tr>
<th></th>
<th>Estimate</th>
<th>S.E.</th>
<th>C.R.</th>
<th>P</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ar-rahnu Relationship</td>
<td>.647</td>
<td>.059</td>
<td>10.963</td>
<td>***</td>
<td>Significant at .001</td>
</tr>
<tr>
<td>Trust</td>
<td>.717</td>
<td>.073</td>
<td>9.811</td>
<td>***</td>
<td>Significant at .001</td>
</tr>
<tr>
<td>Ar-rahnu Relationship</td>
<td>.185</td>
<td>.048</td>
<td>3.871</td>
<td>***</td>
<td>Significant at .001</td>
</tr>
<tr>
<td>Trust</td>
<td>.099</td>
<td>.046</td>
<td>2.128</td>
<td>.033</td>
<td>Significant at .050</td>
</tr>
</tbody>
</table>

Figure 2. The regression path coefficient between constructs in the model
From the result of the SEM analysis above (Figure 3 and Table 4), the level of significance for regression weight could be justified. The probability of getting a critical ratio 10.963 in an absolute value was 0.059. In other words, the regression weight for Benefits in the prediction of Long-Term Relationship between customers and financial institutions is significantly different from zero at 0.001. In other words, \( H_1 \) is empirically supported.

\[ H_1: \text{The benefits of Ar-Rahnu contribute a positive and significant effect on trust.} \]

The probability of getting a critical ratio 9.811 in an absolute value was 0.073. In other words, the regression weight for Benefits in the prediction of Customers’ Trust on financial institutions is significantly different from zero at the 0.001. In other words, \( H_2 \) is empirically supported.

\[ H_2: \text{The sacrifices of Ar-Rahnu contribute a significant effect on long-term relationship between customers and financial institutions.} \]

The regression weight for Sacrifices in the prediction of Trust was also significantly different from zero at the 0.05 level (two-tailed). The probability of getting a critical ratio as large as 2.128 in absolute value was less than 0.046. In other words, \( H_4 \) is empirically supported.

\[ H_4: \text{The sacrifices of Ar-Rahnu contribute a significant effect on Customers’ trust towards financial institutions.} \]

DISCUSSION

This paper examined Ar-Rahnu benefits and sacrifices on the long-term relationship and trust between customers and financial institutions. Thus, a new theoretical framework was proposed and the results confirmed its benefits on customers’ long-term relationship and trust. The sacrifices had a significant effect as well. This is consistent with earlier studies.

This study confirmed the findings of Ahmad, Mansor and Nadiah (2012), Nor, Abdullah, Ismail, Bakar and Yusni (2012), and Othman, Hashim and Abdullah (2012) about the effect of service quality on Ar-Rahnu customer satisfaction. However, this research manipulates the construct of service quality in the benefits towards long-term relationship and trust instead of customer satisfaction. This study also confirmed the findings of gold investment, transparency, staff competency, and product features by Hosen and Sa’roni (2012), Abdul-Razak (2011), Hisham et al. (2013), and Muhamat, Rosly and Jaafar (2011).
The customers of *Ar-Rahnu* are predicted to have a long-term relationship with Islamic financial institutions when they are assured of high-quality services. It means that a customer will choose to renew the relationship with an *Ar-Rahnu* outlet if the premises has a special room and security, limited forms and waiting time, and accurate information about prices and Islamic contracts. Customers are also willing to pledge their gold in *Ar-Rahnu* because of these high-quality services. They feel that the Islamic financial institutions have the ability and credibility to hold their gold.

The competency of *Ar-Rahnu* staff also affects the long-term relationship between the customer and the institution. The expertise of staff in valuing the gold results in a long-term relationship between customers and institutions. There are differences in valuing system among *Ar-Rahnu* institutions in Malaysia. Normally the staff will use Densimeter and Acid to test the originality of the gold. Some *Ar-Rahnu* institutions use more sophisticated tools. Customers also feel confident with Islamic financial institutions expertise in gold valuation.

Product features and transparency also affect the long-term relationship in *Ar-Rahnu* business. Customers need a long tenure and renewal period to pay the storage fee and redeem the pledged item. The differences of financing tenure and renewal period among the *Ar-Rahnu* institutions allow the customers to choose a suitable outlet. The customers also believe that the Islamic financial institutions are good and kind to them in all the process and tenure of loan.

This research also verifies gold investment and business capital need as a new construct in this model. These constructs have been proven to be influential in the long-term relationship between *Ar-Rahnu* and its customers. Gold investment and business capital as determinant factors was lacking in earlier studies. In CFA analysis, both of these constructs have been verified as dimensions of *Ar-Rahnu* benefits. This means, from the sampling size, majority of the customers prefer to use *Ar-Rahnu* to fulfil their needs in gold investment and business capital.

The findings showed that these seven dimensions of *Ar-Rahnu* benefit customers. The higher these dimensions received by the customers, the stronger the motivation of the customers to commence and sustain the exchange of their gold with fast cash respectively. This phenomenon will contribute to competition among the *Ar-Rahnu* financial institutions in enhancing their benefits. This includes making a longer renewal financing tenure and renewal period as well as to reduce the transaction cost. Hence, through this research, we opine that *Ar-Rahnu* does not contravene with the principals of Islamic Transaction Law as the sacrifices from customers are expected to be reduced in offering a better service.

The additional cost and time cost influence the long-term relationship and trust. The higher the additional cost and time
the customer needs to sacrifice, the shorter the relationship between the financial institution and customer.

The study of benefits-sacrifices exchange has not been tested in the Ar-Rahnu business context. Thus, this paper contributes a new insight into Ar-Rahnu determinants among customers.

**CONCLUSION**

This paper has attempted to theorise a new model of relationships between the customers of Ar-Rahnu and financial institutions. The original model for Ar-Rahnu development proposed by Amin and Chong (2011) was extended for this purpose. The assumption of this study was that social dimension can create and change the environment of Ar-Rahnu business in Malaysia. The study contributed a new framework and a new theoretical suggestion with regards to Ar-Rahnu benefits for a long-term relationship.

**REFERENCES**


Ryu, S., Park, J. E., & Min, S. (2007). Factors of determining long-term orientation in interfirm...
The Role of BSX on Ar-Rahnu Relationships


Relationship between Knowledge, Attitude, and Religiosity with the Intention to Provide *Halal* Maintenance among Muslim Fathers in Malaysia

Sa’odah Ahmad¹,²*, Rojanah Kahar¹,² and Muslihah Hasbullah²

¹Halal Products Research Institute, Universiti Putra Malaysia (UPM), 43400 Serdang, Selangor, Malaysia
²Department of Human Development and Family Studies, Faculty of Human Ecology, Universiti Putra Malaysia (UPM), 43400 Serdang, Selangor, Malaysia

ABSTRACT

In Islam, fathers have a primary duty to provide for *halal* maintenance, education and good guidance to develop their children into a righteous and respectable person. Statistics from the Syariah Court of Terengganu showed 1371 cases of noncompliance with maintenance order filed between 2010 to 2016 and eight fathers had been ordered to be imprisoned for failure to do so. This study was conducted to determine the relationship between Muslim fathers’ knowledge, attitude, religiosity and the intention to provide *halal* maintenance to the family. A total of 353 fathers participated in this study. Descriptive and inferential statistics were used to analyse data. Result revealed that there were significant and positive relationships between knowledge, attitude and religiosity with the intention to provide *halal* maintenance. The findings implied that knowledge, attitude and religiosity influence fathers in their decision to provide *halal* maintenance to their families. Therefore, an increase in knowledge, attitude, and religiosity, will increase the level of intention to provide *halal* maintenance to the family.

Keywords: Attitude, fathers, *halal* maintenance, knowledge, religiosity

INTRODUCTION

Appropriate functioning of the family constitutes the foundation of human civilisation and stability of society. Muslim legal theorists agree that protection of lineage and safeguarding family values are the purposes of Islamic law (*maqasid al Shariah*). Islamic law has a rich heritage of rights and obligation. Furthermore, it
considers the role of faith and sanctions equally important in the performance of an obligation. It is the responsibility of human being to carry the trust (amanah) and duties as entrusted by Allah S.W.T to the benefit of others. Therefore, fulfilling responsibilities as required by the Islamic law are closely associated with rewards and the failure to perform is a sin.

The family has a special status in Islam because it is the nucleus and cradle of the society. This means that the development and well-being of society will depend on how the family institution is structured and cared for. Islam has a significant focus on family and development, providing safeguards, seeing to it that family is a point of comfort and relaxation, strengthening the relationship between the husband and wife, protecting the next generation, guiding the children and minimising marital woes and disruption. Thus, a valid marriage is the backbone of the family structure in Islam which must be upheld in accordance with Shariah. Both husband and wife have rights and duties which are legally enforceable. These rights and duties are performed in an atmosphere of love and respect. Moreover, Islam provides a framework for the balance of family life and the fulfilment of both spouses.

While the family is the basis of society and civilisation, the relationship of husband and wife and defining their mutual rights and obligations is the basis of family life. Both husband and wife are assigned specific roles and function to ensure the working of a happy and blessed family (sakinah mawaddah wa rahmah). The husband is the head of household and provider of halal maintenance to his dependents while the wife is responsible for looking after the domestic aspects of the family. In addition, the parents are also required to teach their children about the Oneness of Allah, the Qur’anic mandates and principles, the Prophets and their teachings, and the ethical code of Islam according to the Qur’an and the teachings of the Prophet Muhammad S.A.W. It is clear therefore there has to be cooperation between husband and wife or father and mother in building an Islamic (halal) family.

Contemporary Muslim scholars define maintenance as provision of food, clothing, accommodation and any kind of necessary services based on the custom of the society (Badruddin & Azizah, 2007; Sha’ban, 1993). Providing maintenance to the family by the husband is compulsory and has been sanctioned by various verses (ayat) in the Qur’an as well as the hadith. The absolute burden of maintenance of a wife (as well as family) is placed on the husband whatever the wife’s own wealth and income may be. They also become the general guideline to Muslims throughout the world on maintenance of the family. Among the most important one is the verse in Surah al-Nisa’:34 which states:

“Men are the protectors and maintainer of women because Allah has given the one more strength than the other and because they support them from their means”.

(Surah al-Nisa, 34)
In one hadith narrated by Jabir (R.A.), the Prophet Muhammad S.A.W. in his final sermon said:

“Fear Allah concerning women! Verily you have taken them on the security of Allah, and intercourse with them has been made lawful unto you by words of Allah. You too have rights over them, and that they should not allow anyone to sit on your bed [i.e., not let them into the house] whom you do not like. But if they do that, you can chastise them but not severely. Their rights upon you are that you should provide them with food and clothing in a fitting manner...”.

(Sahih Muslim, Kitab al-Haj, 1218)

The provision of maintenance (nafaqah) by a husband to the family is a responsibility that must be fulfilled (Ahmad, 2007; Mimi Kamariah, 1999; Najibah et al., 2016) and has been legislated in Islamic Family Law in Malaysia. The current Islamic Family Law in Malaysia stipulates that the court may, relying on hukum syara’, order a man to pay maintenance to his wife or former wife. However, a wife shall not be entitled to maintenance when she is nasyuz or unreasonably refuses to obey the lawful wishes or commands of her husband (section 59 of the Islamic Family Law Act (Federal Territories) 1984 (IFLA 1984).

The relationship between parents and children gives rise to mutual rights and duties according to maqasid shariah. These rights relate to the protection, care, and maintenance of the child (‘Abdur Rahman, 2002). To take good care of children and show compassion toward them is one of the most commendable deeds in Islam. Thus, responsibility for the child’s welfare is a question of first priority for every parent.

It is a crucial part of the Islamic faith that Muslim consumes only halal food. Therefore, it is incumbent on the father/husband to seek halal earning and ensure that only halal food is consumed by the family. In a hadith narrated by Abdullah Ibn Mas’ud, the Prophet S.A.W was reported as saying, “Seeking halal earning is a duty after the duty.” This hadith clearly specifies that finding a halal job is an obligation of a father after his other fundamental religious obligations, such as solat (prayer), zakat (giving alms) and hajj (pilgrimage to Makkah).

The following are some of verses of the Qur’an and hadith which clearly explain the importance of halal food and its impact on Muslim:

“O mankind! Eat of that which is lawful and good on the earth, and follow not the footsteps of Shaitan. Verily, he is to you an open enemy.”

(Surah al-Baqarah: 168)

In a hadith narrated by Abu Hurairah (May Allah be pleased with him), the Prophet S.A.W was reported to say,

“O people! Allah is Pure and, therefore, accepts only that which is pure. Allah has commanded the believers as He has commanded
His Messengers by saying: ‘O Messengers! Eat of the good things, and do good deeds.’ (Surah al-An’am: 51) And He said: ‘O you who believe (in the Oneness of Allah)! Eat of the lawful things that We have provided you...’” (Surah Al-Baqarah: 172). Then the Prophet S.A.W made a mention of the person who travels for a long period of time, his hair is disheveled and covered with dust. He lifts his hand towards the sky and thus makes the supplication: ‘My Rabb! My Rabb!’ But his food is unlawful, his drink is unlawful, his clothes are unlawful and his nourishment is unlawful, how can, then his supplication be accepted.”. (Sahih Muslim: 2214)

Why does Islam emphasis on halal earning and halal food? From the above verses of the Qur’an and hadith, it is clear that halal earning will enable father/husband to provide halal maintenance to the family. This will lead to halal food consumption. Halal food consumption is one of the tenets set by Islam to ascertain the quality of faith and it is also an act of worship (ibadah) - doing what is enjoined and restraining from what is prohibited (Ghazali & Md. Sawari, 2014). Empirical studies have pointed to the relationship between quality of diet and mental disorders such as depression and anxiety among children and adult (Miller, 2015). Halal food which is pure in nature, ensures good health and purifies the heart and activates it to do good deeds. In other words, the benefits of consuming halal food among others will boost the development of Islamic akhlaq (disposition) among the Muslims, increasing the chances that the du’a (supplication) will be accepted by Allah S.W.T. and protect themselves from vices.

The legal provisions on the husband’s duty to provide maintenance to children, under the current Islamic family law in Malaysia can be found in section 72 of IFLA 1984. The duty of the father to maintain his children does not end with a divorce, whether he has custodial rights or whether the children have reached the age of majority. In the case of Sharifah Sapoyah v. Wan Alwi (1989) 2 JH 259, the court held that the father must maintain his three children until they reach 18 years old. Furthermore, section 79 of IFLA 1984 provides that the court has the power to extend the duration of financial support until the child completes his tertiary education. Parental responsibilities are one of the important elements which have been identified by Islamic law as it connotes legal and moral obligation throughout the children’s lives.

Section 61 of IFLA 1984 provides that: “In determining the amount of any maintenance to be paid, the Court shall base its assessment primarily on the means and needs of the parties, regardless of the proportion the maintenance bears to the income of the person against whom the order is made”. A similar provision can be found in other Islamic Family Law Enactments in Malaysia such as in Selangor
Islamic Family Law Enactments 2003 as provided for under section 6. Therefore, providing financial support is considered as a religious obligation and can be legally enforceable.

According to Najibah (2007), many Muslim husbands have no clear knowledge of the meaning of maintenance (nafqah) and the duties to provide it and some of them even feel that they are not duty bound to maintain a working wife as she has her own lifeline (to support herself). Thus, claims for maintenance had been brought by wife and former wife to the Shariah Courts in Malaysia. Zainoor (2009), Najibah (2007), Zaleha, Roziana and Noorfaizah (2005), and Norasmaliah (2000) also found that there were fathers who had a negative attitude with regards to their duties to provide maintenance to the children after divorce to the extent that they refuse to comply with the court’s order to pay for child support. This has caused financial hardship to the single mothers who are given custody of the children upon divorce. Furthermore, the reluctance of a non-custodial father to establish contact with his children further aggravates the issue of non-payment of maintenance of the children after divorce.

Religiosity and spirituality provide the context from which couples can view marriage and parenting as deserving their attention. This can lead to better family interactions and cohesiveness while decreasing the risk of divorce, marital discord, unfaithfulness, violence, and abuse in the family. Spilman, Nepl, Donnellan, Schofield and Conger (2013) revealed that religiosity acts as a personal resource that is uniquely and positively associated with the quality of family relationships. Their findings support the role of religiosity in a developmental process that promotes positive family functioning. Family religiosity was also found to be the strongest predictor of family functioning for parents (Agate, Zabriskie, & Eggett, 2007). These findings imply that religious couple will perform their functions better. The father’s behaviour in providing halal maintenance is a part of his explicit behaviour. The Theory of Planned Behaviour (Ajzen, 1991) is one of the most influential models for predicting human behaviour and behavioural natures. According to this theory, behaviour or actions are seen as directly determined by intentions. Attitudes (evaluation of the behaviour as positive or negative), subjective norm (perceptions of social pressure or expectations), and perceived behavioural control (perceived difficulty or ease in carrying out the behaviour) are believed to play a direct role in influencing intentions.

There were no previous studies that examined the relationship between knowledge, attitude, and religiosity with the intention to provide halal maintenance to the family. The closest research of this nature was the intention to purchase the halal product (Haslenna, Zuraini, Normala, & Kamaruzaman, 2013; Hayat, Ahmad Nabeel, & Zeeshan, 2012; Noor, Farah, & Aflah, 2014; Nur Haslizatul, 2011) and compliance intention to pay zakat (Nurul, Nova, Yosi, & Purnama, 2012;
Therefore, the present study, the first of its kind, was conducted to examine the relationship between knowledge, attitude, and religiosity with the intention to provide halal maintenance to the family among Muslim fathers in Malaysia.

MATERIALS AND METHODS

Sample and Procedures

This study was conducted in four states (Kedah, Johor, Selangor, and Terengganu) which represent the geographical zone in Peninsular Malaysia. The total numbers of participants were 353. They were married Muslim men working in government agencies and chosen randomly to participate in the study. Respondents’ approval and willingness to participate were sought prior to the distribution of structured questionnaires. Participants were also informed of the confidentiality of their response. The questionnaires were self-administered and a token of appreciation was given to the participants upon completion of their questionnaire.

Measures

Knowledge of the responsibility to provide halal maintenance. Knowledge of the responsibility to provide halal maintenance was measured by an adaptation of Halal Haram Consumer Index (Nor Aini & Mohd Ali, 2013). The scale consisted of eight items. Some of the items included were, ‘I know what is meant by halal maintenance’, ‘I know that in Islam, father/husband has the responsibility to provide for halal maintenance to the family’ and ‘I know that legal action can be taken against me if I failed to provide for maintenance to my family’. The responses were rated on a 4-point scale ranging from 1=strongly do not know to 4=strongly know. For this study, the alpha coefficient for knowledge was 0.90 which indicated a good internal consistency of the scale.

Attitude of the responsibility to provide halal maintenance. The attitude of the responsibility to provide halal maintenance was measured by an adaptation of Halal Haram Consumer Index (Nor Aini & Mohd Ali, 2013). The scale consisted of six items. Some of the items included were, ‘For me, it is important to provide halal maintenance to the family’, ‘For me, it is a great achievement if a father/husband is able to ensure that the maintenance provided to the family is halal’ and ‘I always strive to provide halal maintenance to my family’. The responses were rated on a 4-point scale ranging from 1=strongly disagree to 4=strongly agree. For this study, the alpha coefficient for attitude was 0.90 which indicated a good internal consistency of the scale.

Religiosity. Religiosity was measured by an adaptation of the Religiosity Scale (Abdul Shukor & Jamal, 2013). The scale consisted of 14 items. Some of the items included were: ‘My religion is not important to me’, ‘Religious belief influence all my dealings with others’ and ‘A true Muslims are those
who practise the commandment of Allah S.W.T and forsake all that He forbid’. The responses were rated on a 4-point scale ranging from 1=strongly disagree to 4=strongly agree. For this study, the alpha coefficient for religiosity was 0.84 which indicated a good internal consistency of the scale.

**Intention to provide halal maintenance.**
Intention to provide halal maintenance was measured by an adaptation of Intention Scale (Fishbein & Ajzen, 1975). The scale consisted of 3 items. The items were, ‘I plan to provide for halal maintenance to my family’, ‘It is most likely that I will provide for halal maintenance to my family’ and ‘I will provide halal maintenance to my family’. The responses were rated on a 4-point scale ranging from 1=strongly disagree to 4=strongly agree. For this study, the alpha coefficient for intention was 0.64.

**Socio-demographic characteristics.**
Participants answered demographic questions, such as age on years of education, years of marriage, income, and the number of children.

**Data Analyses**
First, descriptive analysis was conducted to provide a clearer picture of data distribution. Second, exploratory data analysis was conducted to determine whether the inferential statistical methods selected fulfilled the basic assumptions in terms of normal distribution of population, linearity between the dependent variable and the independent variables. Third, the magnitude and strength of the relationship of the studied variables were quantitatively measured using Pearson product-moment correlations.

**RESULTS AND DISCUSSION**

**Socio-Demographics Characteristics**
The mean age of participants was 38.4 years old (SD = 9.7). On average, they had completed 13 years of formal education (SD = 1.9) and had been married for about 11 years (SD = 9.6). They had an average income of RM2458.11 (SD = RM1082.30). The average number of their children was 2.53 which is slightly below the average size of the Malaysian family of 2.76 (Ninth Malaysian Plan 2006-2010).

**Knowledge, Attitude, Religiosity, and Intention to Provide Halal Maintenance**
Based on the findings as shown in Table 1, a little over half of the participants (51.0%, n=180) reported having high level of knowledge on the responsibility to provide halal maintenance while 38.8% (n=137) and 16.0% (n=36) of participants reported having low and moderate level of knowledge on the responsibility to provide halal maintenance. In terms of attitude on the responsibility to provide halal maintenance, most (68.6%, 242) participants were categorised in the high level, followed by 24.0% (n=86) at the low level and the remaining 7.1% (n=25) at moderate.

As regards to religiosity, 43.3% (n=153) of the respondents were categorised at the high level followed by 36.5% (n=129) at
the low level and the rest (n=71) at the moderate level. As shown in Table 1, most (58.9%, n=208) participants reported of having a high level of intention to provide halal maintenance to the family followed by 31.2% (n=110) having a low level and 9.9% (n=35) having a moderate level.

From these data, it is clear the respondents were knowledgeable about their responsibility to provide halal maintenance to their families. This may be due to the fact that most (64.5%) of them were either in the high or moderate level of religiosity category and had spent an average of 13 years pursuing their education.

Relationship between Knowledge, Attitude, and Religiosity with Intention to provide Halal Maintenance

Correlational analyses were used to explore the relationships among variables in the study (Table 2). Findings revealed that there were positive relationships between knowledge (r=0.279, p<0.001), attitude (r=0.289, p<0.001), and religiosity (r=0.410, p<0.001) with the intention to provide halal maintenance to the family. These findings showed that the intention to provide halal maintenance to the family is influenced by knowledge, attitude, and religiosity. In addition, these findings imply that when fathers are knowledgeable about their responsibilities, have a positive attitude towards them and have a good religious background, they will be more ready, willing and intend to comply with the responsibilities.

The results of this study confirm those of earlier ones by Spilman et al. (2013) and Agate et al. (2007) which supported the role of religiosity in a developmental process that promotes positive family functioning and that family religiosity was the strongest.

Table 1
Level of knowledge, attitude, religiosity and intention to provide halal maintenance

<table>
<thead>
<tr>
<th>Variables (score)</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low (&lt;29)</td>
<td>137</td>
<td>38.8</td>
</tr>
<tr>
<td>Moderate (29-30)</td>
<td>36</td>
<td>16.2</td>
</tr>
<tr>
<td>High (≥31)</td>
<td>180</td>
<td>51.0</td>
</tr>
<tr>
<td>Attitude</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low (&lt;18)</td>
<td>86</td>
<td>24.4</td>
</tr>
<tr>
<td>Moderate (18-19)</td>
<td>25</td>
<td>7.1</td>
</tr>
<tr>
<td>High (≥20)</td>
<td>242</td>
<td>68.6</td>
</tr>
<tr>
<td>Religiosity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low (&lt;52)</td>
<td>129</td>
<td>36.5</td>
</tr>
<tr>
<td>Moderate (52-54)</td>
<td>71</td>
<td>20.1</td>
</tr>
<tr>
<td>High (≥55)</td>
<td>153</td>
<td>43.3</td>
</tr>
<tr>
<td>Intention to provide halal maintenance for the family</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low (&lt;10)</td>
<td>110</td>
<td>31.2</td>
</tr>
<tr>
<td>Moderate (10-11)</td>
<td>35</td>
<td>9.9</td>
</tr>
<tr>
<td>High (≥12)</td>
<td>208</td>
<td>58.9</td>
</tr>
</tbody>
</table>
predictor of family functioning for parents. As regard to attitude, the finding confirmed the Theory of Planned Behaviour (Ajzen, 1991) that suggests attitude plays a direct role in influencing intentions.

The findings are also consistent with those of other studies (on factors which influence intention) which seem to support the idea that knowledge, attitude and religiosity motivate intention to perform certain behaviour (Azmawani, Ebrahim, Suhaimi, 2015; Farah Mastura & Zainol, 2015; Hayat et al, 2012; Noor et al., 2014).

Table 2
Correlation between variables of the study

<table>
<thead>
<tr>
<th>Variables</th>
<th>Intention to Provide Halal Maintenance for the Family</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( r )     [ p ]</td>
</tr>
<tr>
<td>Knowledge</td>
<td>.279***     .000</td>
</tr>
<tr>
<td>Attitude</td>
<td>.289***     .000</td>
</tr>
<tr>
<td>Religiosity</td>
<td>.410***     .000</td>
</tr>
</tbody>
</table>

*Note: *** Level of significant is at \( p<0.001 \)

CONCLUSION

This study provides a foundation for future research in this area as this is the first known research that investigated the relationship between knowledge, attitude, religiosity and intention to provide halal maintenance in the context of Malaysian Muslims. The positive relationships as shown by the data indicated that the increase in the level of knowledge, attitude, and religiosity, tend to increase the level of intention to provide halal maintenance to the family.

Some limitations of the present study should be noted. Firstly, due to cross-sectional nature of the data, the conclusion about the effects of the relationship between knowledge, attitude, religiosity and intention to provide halal maintenance cannot be generalised to other population. Second, data was retrieved from the self-reported questionnaire. Therefore, the validity and reliability of the information obtained depended solely on the integrity of the respondents.

On a final note, although the data did not represent all the Muslim fathers in Malaysia, the findings pointed to a clear trend on the relationship between knowledge, attitude, religiosity, and intention to provide halal maintenance. The findings of this study are very significant as they provide the baseline knowledge on the matter. Most importantly, this study is the first of its kind and has successfully filled the research gap pertaining to Malaysian Muslim father’s intention to provide halal maintenance to the family.

ACKNOWLEDGEMENT

This study was supported by Geran Putra IPB scheme under Universiti Putra Malaysia (UPM).

REFERENCES


Correlates of Intention to Provide Halal Maintenance


Buying Halal Pharmaceutical Products: Do Consumers Have Imperfect Knowledge?

Nur Famiza, A.,¹ Nor Samsinar, K.¹*, Kursimah, H.¹ and Radin Firdaus, R. B.²

¹Faculty of Business Management, Universiti Teknologi MARA (UiTM) Perak, 32610 Bandar Seri Iskandar, Perak, Malaysia
²School of Social Sciences, Universiti Sains Malaysia (USM), 11800 Gelugor, Pulau Pinang, Malaysia

ABSTRACT

In Malaysia, there is a growing demand for halal pharmaceutical products, especially from conscientious Muslims. For Muslims, seeking halal goods is a must in order to get Allah’s blessings. Nevertheless, there are only a few pharmaceutical products in the market with the certified halal logo. Thus, for Muslim consumers in Malaysia, their due diligence effort involves looking at the ingredient listed in the packaging. For many consumers, some of this information is far beyond their common knowledge. If this happens, consumers are actually in the position of having imperfect knowledge. This study was therefore conducted to investigate the factors that caused imperfect knowledge in the buying decisions of Muslim consumers. Questionnaires were distributed to 100 Muslim respondents at public clinics in Putrajaya. This study found that label, awareness, and trustworthy led to imperfect knowledge in the buying decisions of pharmaceutical products among Muslim consumers.

Keywords: Halal, imperfect knowledge, Muslims, pharmaceutical products

INTRODUCTION

The concept of imperfect knowledge was introduced by Akerlof in 1970 which contradicted with the key assumptions of neo-classical economics. Akerlof won the Nobel Prize through his paper titled “The Market for Lemons: Quality Uncertainty and the Market Mechanism”. Akerlof’s theory explained how the information that buyers received is not always perfect and led to market failure. He illustrated the presence...
of information asymmetry in a used car markets, which only the sellers know whether they hold “Peach” (good product) or “Lemon” (defected product). Commonly, information asymmetries are studied in the context of principal-agent problems that raise the issue of moral hazard and widely applied in economics, insurance and risk management. Nevertheless, information asymmetry also occurs in halal market involving sellers and buyers who have different information about the halal status of the product (Waarden & Dalen, 2010).

In general, halal products refer to products that are permitted under the Islamic law which follow appropriate processes or procedures. In the al-Quran, it is stated “O Mankind, eat from whatever is on earth (that is) lawful and good and do not follow the footsteps of Satan. Indeed, he is to you a clear enemy” (al-Baqarah 2:168). Thus, it is an obligation for Muslims to seek and consume halal goods. A halal product should be halal (in accordance to Shariah principles) throughout its entire production chain, which encompasses the beginning stage of extracting raw materials to the manufacturing equipment, production, marketing, storage, packaging and labelling processes until it meets the end users.

The growth of the halal industry has extended beyond the food sector. Almost 40% of the halal market segment is dominated by pharmaceutical and cosmetic products (Elasrag, 2016). A pharmaceutical product consists of biotechnology products, including medicine and vaccines. The major concern among Muslim consumers is that commonly, most pharmaceutical product ingredients are sourced from animal derivatives and animal-based gelatines particularly pork, unlawful animals or from animals not slaughtered according to Islamic laws. In the al-Quran, it is also stated that “O you who have believed, eat from the good things which We have provided for you and be grateful to Allah, it is (indeed) Him that you worship” (al-Baqarah 2: 172).

Malaysia plays a leading role as the world’s halal hub. In Malaysia, the Department of Islamic Development Malaysia (JAKIM) is the authority responsible for halal certification. Similar to all other endorsements, it is typically communicated to consumers using the endorsed JAKIM’s logo. In addition to the existence of fake halal logo problem, there is an abundance of pharmaceutical products that do not go through halal certification by JAKIM due to the reluctance manufacturers and producers to follow standard procedures and requirements set up by the accreditation body (Mustafa & Azlin, 2014). Producers usually do not opt not to apply for halal certification since obtaining the certification does not really have a significant impact on their sales. Meanwhile, consumers are not really concerned with the certification since they perceive that the list of ingredients on the packaging is more than sufficient for them to base their decision. Currently, there are limited options available for pharmaceutical companies if buying decisions are made based on the halal logo. Thus, they choose to trust a product based on its reputation and credibility (Asadollah,

Imported pharmaceutical products are the market leaders in Malaysia. Some of them use halal logos from unrecognised and unknown international halal certification bodies. In 2010, the Selangor Islamic Religious Council (MAIS) had identified non-certified halal logos and banned them. However, according to the Federation of Malaysian Consumer Associations (FOMCA), local related authorities as well as the media should also play their proactive roles to inform consumers of products containing non-halal ingredients, especially Muslim consumers (Borneo Post, 2011).

Most of the past studies focused on the attitude and perception towards halal food and products. According to Alba & Hutchison (1987), product evaluations and choice behaviour are based on knowledge dimension which depended on specific situation. For instance, Saleha, Azmi, Imran, Fahad and Muhammad (2013) assessed the level of public knowledge on halal pharmaceuticals and found that there are correlations between knowledge and attitude and perception. On the other hand, this study attempts to examine the factors that led to imperfect knowledge, which is plagued by the problems of information asymmetry between buyers and sellers. Imperfect knowledge is also known as information failure. It occurs when consumers have inaccurate, incomplete, uncertain or misunderstood data and thus, may make a potentially wrong choice.

LITERATURE REVIEW

Imperfect Knowledge

Knowledge is a form of personal perception. According to Richardson (1953), knowledge is imperfect when it “is fragmented in that each of us knows only a very small part of all that is to be known, though individual fields of vision may overlap; and it is uncertain in that much of what”. Knowledge among economic agents differs, cannot be shown at the time to be certainly true or false, and would become imperfect when the information had by them is fragmented and uncertain (Richardson, 1953). Knowledge that is built on perception is referred to as experiential knowledge. In France, it is found that consumers’ perception on halal food products which is presented at the point of purchase (POP) influenced their attitude and intention to buy (Teguh, 2013). In this case, producers have more knowledge on the ingredients of their product. Some of them assume that by revealing the ingredient information on the product’s packaging and labelling, they have complied with certain halal standards and requirements. The same goes to the consumers. They believe that the ingredient information given on the product’s packaging and labelling is adequate for them to make a decision. Nevertheless, ingredient information does not guarantee that the product is halal compliant.

Label

A product’s label usually provides a lot of useful information, including the product’s
brand. Brand could create a significant influence on consumers’ intention to purchase. This depends on the quality of the product and its established reputation in the market. Nevertheless, there is a hidden gap between the halal logo and brand that has led to the illusion of strong brand equity, even though it is not Sharia compliance (Wan Rusni, Mohhidin, Russly, Nitty, & Suhaimi, 2016). Asadollah et al. (2013) examined customers’ attitude towards products with halal labels who were convinced that improvements in advertising would convey the right information about halal products as well as improve the image and commercialisation aspects of it. Saleha et al. (2013) emphasised the importance of drug companies to clearly mark the packaging with a halal or non-halal logo so that the public can make a choice. The halal certificate on the products’ label would certainly help consumers to distinguish between halal and haram products (Hanzaee & Ramezani, 2011).

Awareness
Consumer awareness relates to their perception and cognitive reaction to a product in the market (Ambali & Bakar, 2014). According to Ezanee, Siti Norezam, Noorulsadiqin and Adam (2016), individuals have different levels of awareness based on their background, religion, culture, education, and social interaction. However, consumer awareness on halal principles and products could be improved through a third party such as mass media, forums, and printed media (Pazim, Abd Rahim, Mahmud, & Lim, 2010). Their roles are crucial to increase the level of awareness among consumers, which would eventually spur growth of the halal industry worldwide. Golnaz, Zainalabidin, Mad Nasir and Eddie Chiew (2008) showed that even the non-Muslims in Malaysia are aware of halal principles in relation to food consumption. Therefore, it would be more feasible for Malaysia to develop into a halal hub country.

Access to Product Information
The ways used to search for the right information vary among individuals. Some might rely on their internal capabilities (memory thinking) and external sources (word of mouth, media, store visit and trial) (Lars, 1999). In terms of availability of products, Vermeir and Verbeke (2006) claimed if the intention or motivation to purchase merchandise is high but there is no accessibility, it will not lead to purchases. In general, Muslims are allowed to consume Haram products in life-threatening situations. Even though currently, halal certification through the halal logo is not widespread in the pharmaceutical market, the demand for pharmaceutical products that adhere to Muslim rules is growing (Walker, Buchta, Reuter, & Gott, 2011). It is important for a halal product to comply with the Sharia requirement, including having clear and relevant information (Talib & Johan, 2012). Developing a halal tracking system which is able to reduce fraud and counterfeit of tags would be helpful for consumers to have right information about products’ halal status (Norman, Md Nasir, & Azmi, 2008).
halal logo serves as important information. However, there are more than 120 active halal certifying bodies worldwide (Demirci, Soon, & Wallace, 2016). This could create confusion among Muslim consumers in buying imported halal products.

**Education**

Abdul, Syeda and Moeed (2014) found that consumers’ level of education and income were the key determinants of consumers’ response to product offer. Consumers who had high school degrees were more responsive to product offers. Similarly, a study by Endang (2010) indicated that Muslims in Banten, Indonesia who had higher education were more concerned about consuming halal food. Hasan, Fazullah, Borham, Hashim and Razak (2011) emphasised on the importance of educational institutions to spread halal knowledge and being a medium of transmitting knowledge.

**Trustworthiness**

Consumers purchase a product due to social pressure, opinion of certain reference groups such as family, friend or following the market trends (Teng, Wan Jamaliah, Siong, & Mesbahi, 2013). Muslim consumers’ confidence on halal food product relies on the halal logo, which serves as an important factor that could increase trustworthiness among them (Golnaz et al., 2008). In the context of pharmaceutical products, consumers usually cannot decide on the suitable medicine for them. It is the physician or pharmacist’s role to prescribe the best medicine for a patient without disregarding his or her religious beliefs and requirements of the patient (Saleha et al., 2013). Thus, for Muslim consumers, they rely on physicians’ or pharmacists’ information about the halal status of their medicines.

**METHODS**

A cross-sectional study design was adopted using a structured Likert scale. Data was personally collected by researchers through self-administered questionnaires. This method was chosen because it was more feasible to elicit information and data could be collected in a short period of time. As shown in Table 3, the questionnaire items were developed based on the items and variables of previous studies. The questionnaires were distributed to a representative sample at five Putrajaya General Clinics located at Precinct 3, 9, 11, 14 and 18. The clinics in the area of Putrajaya were chosen because Putrajaya has one of the largest Muslim population in Malaysia. This study used a random systematic sampling method based on the patient registering number in the sequence of 10, 20, 30 and so on at each clinic. The final sample consisted of 100 respondents.

A pilot study was conducted on 10% of the total study sample to evaluate the reliability of the questionnaire. A Cronbach’s alpha test was conducted to check its validity and internal consistency. A Cronbach’s alpha value of, $\alpha=0.6$ was set as the minimum acceptable value for validity. The value indicates overall index of the repeatability or internal consistency of the scale as a
whole. It also identifies items that should be excluded from the scale. Table 1 shows all the items were reliable and valid.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Reliability test result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
<td>Number of items</td>
</tr>
<tr>
<td>Imperfect Knowledge</td>
<td>5</td>
</tr>
<tr>
<td>Label</td>
<td>5</td>
</tr>
<tr>
<td>Awareness</td>
<td>5</td>
</tr>
<tr>
<td>Access to product information</td>
<td>4</td>
</tr>
<tr>
<td>Trustworthiness</td>
<td>2</td>
</tr>
</tbody>
</table>

### RESULTS AND DISCUSSION

The demographic questions in this questionnaire are summarised in Table 2. It represents a respondent profile for a sample size of 100 Muslims. The majority of the respondents were female. Most of the respondents were between 21 and 30 years old and almost half of them worked in the government sector.

Table 3 shows the descriptive statistics for each variable and its items. Each item was measured using Likert-scale with the minimum scale set at 1 and the maximum scale at 5 (from strongly disagree=1 to strongly agree=5). For education, the minimum value was 1 and the maximum scale was 3 (high school=1, diploma/degree=2 and masters/PhD=3). It was found that most respondents had high school and diploma/degree level education.

In terms of knowledge, the majority of the respondents understood the halal concept. However, they still purchase pharmaceutical products without the halal logo. This implied that consumers were irrational in their decision of purchasing. In assessing their feedback on international halal logos, they trusted the halal logos and believed that the imported products are Sharia compliant. However, since there are many halal certifying bodies worldwide, confirming the halal status of a product is not a simple task where consumers can make a decision at that point of time. Moreover, certain countries manipulate halal logo which worsens the situation. In terms of label, the respondents’ views on the recognition of JAKIM’s halal logo was neutral, which indicated that they were not really sure of right JAKIM logo but still chose products as long as there was a halal logo. Low attention in validating the halal status of the product was also reflected when respondents showed neutrality on checking product ingredients, since they purchase

<table>
<thead>
<tr>
<th>Table 2</th>
<th>Respondents’ demographics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Characteristics</td>
<td>Demographic Characteristics</td>
</tr>
<tr>
<td>Gender</td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td>Male</td>
</tr>
<tr>
<td></td>
<td>Less than 20 years</td>
</tr>
<tr>
<td></td>
<td>21 – 30 years</td>
</tr>
<tr>
<td>Age</td>
<td>31 – 40 years</td>
</tr>
<tr>
<td></td>
<td>41 – 50 years</td>
</tr>
<tr>
<td></td>
<td>51 – 60 years</td>
</tr>
<tr>
<td></td>
<td>Student</td>
</tr>
<tr>
<td></td>
<td>Government Sector</td>
</tr>
<tr>
<td>Occupation</td>
<td>Private Sector</td>
</tr>
<tr>
<td></td>
<td>Self Employed</td>
</tr>
<tr>
<td></td>
<td>Others</td>
</tr>
</tbody>
</table>
Halal Pharmaceutical: Do Consumers Have Imperfect Knowledge?

...a product as long as there is a halal logo regardless of whether it was from JAKIM or not. This finding is consistent with Ali (2013), who found that the criteria of accepting halal product were not stringent as consumers deemed any product with a halal logo as halal regardless of whom endorsed the certification.

Respondents also agreed that they are exposed to a variety of international halal logos, and their awareness of it will increase if this is discussed in social media. The respondents agreed there were many pharmaceutical products without the halal logo and the challenges they faced in getting halal pharmaceutical products, even though the number of halal pharmaceutical products is growing. It was also found that trustworthiness is vital in consuming pharmaceutical products. In terms of consuming a product without the halal logo, they claim the product is safe to be used. Trust could be gained based on recommendations by doctors, medical practitioners and friends. There was also the perception that if the product is well known and widely used, there should not be any concerns related to its halal status.

Table 4 shows the Pearson correlation coefficient results. At 5% significance level, even though the r value shows a weak relationship but label, education and trustworthiness appear to have a significant correlation with imperfect knowledge. The label variable was highly correlated with imperfect knowledge (r=0.392, p<0.05), followed by trustworthiness (r=0.31, p<0.05) and education (r=0.159, p<0.05). This indicates that the information on label is the most crucial factor in delivering messages to consumers, despite their education and trustworthiness. There is also a relationship between trustworthiness and label at r=0.489, p<0.05 and access to product information with label (r=0.260, p<0.05). Thus, this study conclude that the importance of label is to gain trust; hence, label should represent all the necessary information that indicate the halal status of the product. Access to product information is also linked to awareness (r=0.272, p<0.05). Thus, it shows that the existence of the product itself will create awareness of the halal pharmaceutical product.

Results from the regression analysis are shown in Table 5. Label and trustworthiness were positively significant in explaining the imperfect knowledge, while awareness was not significant. This result implies that consumers’ imperfect knowledge is based on the product’s trustworthiness and its label. This finding is consistent with that of by Teng et al. (2013), Ambali and Bakar (2014), Ali (2013), and Marjan, Mostafa and Zohreh (2015), who pointed to the importance of halal label for Muslim consumers to make an informed decision. Trustworthiness rests upon consumers’ own perception and recommendations particularly for pharmaceutical product as consumers rely heavily on the advice of their physicians (Saleha et al., 2013). Thus, physicians need to be aware and consider the patients’ religious beliefs and practices. In this study, awareness appeared to have negatively influenced imperfect knowledge.
Table 3
Descriptive analysis

<table>
<thead>
<tr>
<th>Variable</th>
<th>Items</th>
<th>Mean</th>
</tr>
</thead>
</table>
| Imperfect Knowledge (Source: Ali, 2013; Saleha et al., 2013) | *I know what is Halal*
*I am confident that a product with the Halal logo is shariah compliant*
*I am confident with all countries’ Halal logos*
*I am confident with a product that contains Halal ingredients*
*Yes, I have purchased pharmaceutical products with no Halal logo* | 3.89 |
| Label (Source: Ali, 2013; Jamaliah, 2013; Teng et al., 2013)   | *The Halal logo is the label I check in determining the Halal status*
*I choose products with the Halal logo*
*I can recognise the Halal logo by JAKIM*
*I read the content of a pharmaceutical product before purchasing it* | 3.42 |
| Awareness (Source: Ali, 2013; Ambali & Bakar, 2014)            | *I trust the Halal logo from JAKIM*
*Halal logos from other countries make me more curious to check the ingredients*
*I always look for information on Halal products*
*There are a variety of Halal logos for pharmaceutical products* | 3.55 |
| Access to product information (Source: Asadollah et al., 2013) | *There is an increase in pharmaceutical products with the Halal logo in the market.*
*I believe that pharmaceutical products with the Halal logo are easy to find in the market*
*There is an abundance of pharmaceutical products without Halal logos but are safe to be used.* | 3.47 |
| Education (Source: Abdul et al., 2013)                         | *Level of education*                                                                                 | 1.77 |
| Trustworthiness (Source: Hussin, Hashim, Yusof, & Alias, 2013; Teng et al., 2013; Saleha et al., 2013) | *I purchase the product if it is recommended and the effectiveness is proven*
*The product is Halal if it is well known and widely used.* | 3.39 |

Table 4
Pearson correlation

<table>
<thead>
<tr>
<th>Variable</th>
<th>Imperfect Knowledge</th>
<th>Label</th>
<th>Awareness</th>
<th>Access to product</th>
<th>Education</th>
<th>Trustworthiness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imperfect Knowledge</td>
<td>0.392*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Label</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Awareness</td>
<td>-0.09</td>
<td>0.067</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Access to product</td>
<td>0.126</td>
<td></td>
<td></td>
<td>0.260*</td>
<td>0.272*</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>0.159*</td>
<td>0.123</td>
<td>0.019</td>
<td>-0.022</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trustworthiness</td>
<td>0.314*</td>
<td>0.489</td>
<td>0.118</td>
<td>0.05</td>
<td>-0.026</td>
<td></td>
</tr>
</tbody>
</table>

Correlation is significant at 0.05 level (sig. 1-tailed)
This finding is supported by the fact that inadequate information on the label would not be a problem if the consumers have a high level of awareness, which is useful in helping them to make the right choice (Ali, 2013; Ambali & Bakar, 2014).

Table 5
Regression results

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardised Coefficients</th>
<th>Standardised Coefficients</th>
<th>T</th>
<th>Sig.</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
<td>Tolerance</td>
</tr>
<tr>
<td>(Constant)</td>
<td>2.113</td>
<td>0.794</td>
<td></td>
<td>2.663</td>
<td>0.009</td>
</tr>
<tr>
<td>Label</td>
<td>0.258</td>
<td>0.109</td>
<td>0.262</td>
<td>2.367</td>
<td>0.02</td>
</tr>
<tr>
<td>Awareness</td>
<td>-0.284</td>
<td>0.17</td>
<td>-0.16</td>
<td>-1.67</td>
<td>0.098</td>
</tr>
<tr>
<td>Access</td>
<td>0.144</td>
<td>0.151</td>
<td>0.094</td>
<td>0.952</td>
<td>0.344</td>
</tr>
<tr>
<td>Education</td>
<td>0.236</td>
<td>0.159</td>
<td>0.138</td>
<td>1.481</td>
<td>0.142</td>
</tr>
<tr>
<td>Trustworthiness</td>
<td>0.262</td>
<td>0.137</td>
<td>0.204</td>
<td>1.907</td>
<td>0.06</td>
</tr>
</tbody>
</table>

Significant in confidence level at 95% and 90%

CONCLUSION
This study showed there were three factors that influenced the imperfect knowledge in purchasing pharmaceutical products: label, awareness and trustworthiness. A product’s label is the most significant factor. Thus, strengthening law and regulations by banning improperly labelled products is crucial in order to protect Muslim consumer interests. Ambali and Bakar (2014), Hussin et al. (2013) and Othman, Shaarani and Bahron (2016) emphasised on the importance of developing a blueprint of guidelines for ASEAN countries as a halal hub with regard to halal certification. Effective regulations and enforcement would not only curb the availability of non-halal products in the market, but would also improve the production process and quality of the products (Rosita & Ishak, 2012). There are cases where the authorities have difficulties in monitoring the inflow of imported products due to several constraints such as limited staff and enforcement in training and preparation (Mustafa & Azlin, 2014). Thus, consumers need to be aware of the risks of buying imported pharmaceutical products since some of them do not provide sufficient and clear product information. This is because manufacturers tend to use coding for some ingredients, in which to some extent, could manipulate consumers since not all consumers comprehend the code. In such situations, consumers’ trust on certain products would usually influence their knowledge. In this study, level of education was found to be insignificant. It shows that higher education does not guarantee that consumers will have perfect knowledge in their buying decisions. Further research is required to fully understand determinants of imperfect knowledge apart from the factors being observed.
REFERENCES


Holy Qur’an, Al-Baqarah 2: verse 168.

Holy Qur’an, Al-Baqarah 2: verse 172.


Applying the Fuzzy Delphi Method (FDM) to Analyze the Expert Consensus Values for Instrument of Shariah-Compliant Gold Investment

Najahudin Lateh1*, Salmy Edawati Yaacob2 and Siti Noobiah Md Rejab1

1Academy of Contemporary Islamic Studies (ACIS), Universiti Teknologi MARA (UiTM), 40450 Shah Alam, Selangor, Malaysia
2Department of Shariah, Universiti Kebangsaan Malaysia (UKM), 43600 Bangi, Selangor, Malaysia

ABSTRACT

The objective of this study is to describe the process of development of Shariah-compliant Gold Investment (SCGI-i) instrument using the Classical Delphi Technique (CDT) and Fuzzy Delphi Method (FDM). The research instrument is based on questionnaire with 4-point Likert scale consisting of three dimensions and 34 items. A total of 13 Islamic Muamalat experts were selected as participants of CDT to obtain consensus. The results showed a high consensus among the participants with a score IQR = 0.00 to 1.00; Mdn = 4.00 to accept these three-dimensional, 32 of the original items and the new item (C11) and rejected two original items (B05; B15). The acceptance score is also supported by the empirical evidence of FDM analysis that shows the value of the threshold (d ≤ 0.2) and the percentage of expert agreement (≥75%). These instruments can be used by Islamic financial institutions to create new products or sharia audit of existing gold investments to comply with the requirements of Islamic Muamalat.

Keywords: Delphi, fuzzy Delphi, gold investment, shariah-compliant

INTRODUCTION

Gold is a precious metal that is also a symbol of power, wealth and beauty as well as a measure of value, medium of exchange and a store of value (Al-Ghazali, 1993; Ibn Khaldun, 2002). These features have sparked public interest in making gold as an investment instrument. In fact, gold-based investment is considered as a good investment compared with others based on a
variety of factors, such as less risk, liquidity and a good long-term record (Umar Azmon, 2002). In Malaysia, a gold investment is carried out in the form of physical gold coins and ingots (Louis, 2009; Shukor, 2009), dinar, gold decoration (Saat, 2011), an account of gold (Mohd Yusra, 2012; Shukor, 2009) and in form of virtual money (Lokmanulhakim, Fairooz, & Bahroddin, 2012).

Public interest has led to the mushrooming of companies that offer a wide range of gold investment products and models. However, many of these companies fail to comply with existing laws (Norlaili, 2012). Bank Negara Malaysia (BNM) alone until October 2015 has listed more than 180 companies and websites under surveillance for not having a license to operate and most of these are gold investment companies (BNM, 2015). For Muslims, the rules of Islamic law on gold transactions have not been taken into account. Thus, this study aims to develop Shariah Compliant Gold Investment (SCGI-i) instrument agreed by experts as an added value for the benefit of gold investors, investment institutions and society.

**Gold Investment Guidelines**

Guidance for reviewing the existing Shariah-compliant products do not cover investment gold specifically. Shariah-compliant criteria developed by standard bodies worldwide including in Malaysia is only suitable for retail markets for different criteria apply for classification of Shariah-compliant securities (Derigs & Marzban, 2008; Suruhanjaya Sekuriti Malaysia, 2013). A different standard from various parties show different Shariah-compliant outcomes. Khatkhatay and Nisar (2007) who analysed three entities, namely Dow Jones Islamic Market (DJIM), Meezan and SC, found that the criteria governing DJIM is very different from Meezan and SC for the hotel industry, broadcasting and media as well as properties to the list of non Shariah-compliant products. This has prompted Ho, Masood and Abdul Rehman (2012) proposed an international standard as a guide to investors.

Shariah standards for existing Islamic finance at the international level have only focused on public investment, especially in the capital markets and securities (Derigs & Marzban, 2008; Suruhanjaya Sekuriti Malaysia, 2013). In Malaysia, the religious authorities through the Committee of the Muzakarah of National Fatwa for Islamic Religious Affairs Malaysia received Gold Investment Parameters (Jabatan Kemajuan Islam Malaysia [JAKIM], 2012a) which act as a guideline. The Parameters containing 23 items were approved after a briefing and explanation by two experts from the International Shariah Research Academy for Islamic Finance (ISRA). Nevertheless, the guidelines are too general and do not have a significant impact on gold investment practices. This is evidenced by a growing number of gold investment institutions supervised by BNM (Bank Negara Malaysia [BNM], 2015) as well as the ban on gold investment company such as Genneva Malaysia Sdn Bhd in July 2012 involving
50,000 customers and RM5 billion in funds since 2007 (Berita Harian, 2012).

This has prompted the Shariah-Compliant Council of the Islamic Financial Institution (IFI) in Malaysia in a dialogue session on May 29, 2012 urging the authorities to update and study further these parameters (JAKIM, 2012b). The Dialogue also recommended “a set of guidelines and investment gold transactions to provide guidance to investors and the general public”. These parameters must be reinforced with comprehensive guide by more experts.

LITERATURE REVIEW

Previous studies focused on the debate on use of gold as a function of the gold itself (Al-Ghazali, 1993; Ibn Khaldun, 2002), the law of gold transactions (Ibn Baz, 2013; Ibn Khaldun, 2002) and the implementation mechanism of gold as currency (Salmy, 2011). Islamic jurisprudence in all schools, whether Hanafi, Maliki, Shafi‘i and Hanbali, emphasise on the function of gold as a medium of exchange, equipment, jewellery, weapons of war, clothing, rings, replacement of limbs, payment of zakat, usury and gold transactions among others (Salmy, 2011).

Specific studies on gold investment are few. Saat (2011) and Muhaimin (2009) discussed techniques of gold investment in Malaysia and Indonesia respectively, but the shariah-compliant method was not described. There have studies in some gold investment institutions, but the debate exists over the application of such instruments, for example in Kuwait Finance House (Mohd Yusra, 2012), Public Gold (Louis, 2009) and in some other institutions (Shukor, 2009). However, there are some studies on the concept of shariah investment gold. Jakim (2012b) and Salmy (2011) examined gold investment according to Islamic perspective through contracts or agreements, such as sale and purchase. Meanwhile, there are two forms of analysis to the study of gold investment products, namely Lokmanulhakim et al. (2012) which analysed the aspects of shariah-compliance and Lokmanulhakim, Fairouz and Bahroddin (2013) which analysed aspects of zakat payment obligations.

Some Muslim scholars disputed these gold investment activities claiming to violate the objectives of Islamic law (maqasid al-syari‘ah) as a measure of value and medium of exchange (Al-Ghazali, 1993; Ibn Taymiyyah, 1995). There are Muslim scholars who argue that gold purchased at a low value and then resold at a higher price when there is an increase in gold prices is not something that is forbidden by Islamic law. This is stated by a number of scholars such as Ibn Baz (2013) and Ibn ‘Uthaymin (2013), as long as the transaction complies with all the criteria for sale and purchase of currencies or al-sarf (Lokmanulhakim et al., 2012).

Criteria for the use of gold in general is stated in the Quran (al-Tawbah, 9: 34; Hud, 11: 87; ali-Imran, 3: 75) and detailed in many authentic hadith of the Prophet Muhammad SAW. Gold has a specific ruling relating to usury compared with other metals such as copper and iron. The Prophet
Muhammad said: “(Convert) gold for gold, silver for silver, wheat for wheat, barley for barley, dates by dates, and salt by salt, same (amount) for the same, equal (quantity) for equal, hand (delivered) for hand. If these kinds differ, sell as you want and do not delay the delivery.” (Narrated by Muslim (2010) from ‘Ubadah bin al-Samit)

There are two categories: (a) currency such as gold, silver, dollar and so on; and (b) staple food items such as wheat, rice and barley. There are three conditions in gold transactions, according to Shariah: (i) gold transactions with gold must be delivered hand for hand immediately when the contract is signed as well as having the same weight; (ii) gold transactions with other currencies must be delivered hand for hand immediately when the contract is signed without delay or debt, but without value or the same weight; and (iii) gold transactions with other items do not have any conditions. Methods of gold transaction are shown in Table 1.

Table 1

<table>
<thead>
<tr>
<th>Currencies category</th>
<th>Staple food category</th>
<th>Other item category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gold</td>
<td>Dollar</td>
<td>Wheat</td>
</tr>
<tr>
<td>Currencies category</td>
<td>Gold</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Dollar</td>
<td>*</td>
</tr>
<tr>
<td>Staple food category</td>
<td>Wheat</td>
<td>***</td>
</tr>
<tr>
<td></td>
<td>Rice</td>
<td>***</td>
</tr>
<tr>
<td>Other items category</td>
<td>House</td>
<td>***</td>
</tr>
<tr>
<td></td>
<td>Car</td>
<td>***</td>
</tr>
</tbody>
</table>

Source: Muslim (2010)

Note: * Sale and purchase or transaction delivered hand in hand immediately when a contract is signed as well as having the same weight; ** Sale and purchase or transaction delivered hand in hand without delay or debt, without having a value or the same weight; *** Sale and purchase or transaction can be delayed or debted instantly, without having a value or the same weight.

METHODS

Delphi Technique

This study used the Delphi Technique (DT), proposed by a panel of experts (Adler & Ziglio, 1996) to reach a consensus (Helmer, 1968) on an decision. Experts and previous studies have proved that the DT is more effective for generating ideas compared with other methods (Ludwig, 1997; Ulschak, 1983). According to Dalkey, Rourke, and Lewis (1972), “several heads are better than one” for the best view will be obtained through a variety of responses from knowledgeable experts. Therefore, the DT is designed as voting procedure and a judgement tool, to make a decision (Rowe & Wright, 1999) and to improve forecasting methods (Dalkey et al., 1972).

Historically, the DT was developed in the early 1950s by Norman Dalkey and
Olaf Helmer for the United States Air Force, sponsored by the RAND Corporation. It was very helpful especially when it was not easy to meet the experts personally (Dalkey & Helmer, 1963; Ludwig, 1997; Miller & Salkind, 2002; Rand, 2013). Currently, of Delphi is used in the fields of education, administration, evaluation of policies, plans and programmes among others. This technique allows experts to deal systematically about a particular problem or complicated task by combining individual decisions to obtain a consensus (Helmer, 1968). An expert participant is more likely to express an opinion freely and without being bound by other people’s opinions (Helmer, 1968).

Participant
The DT was implemented to achieve a high level of agreement among the expert participants, namely individuals with special knowledge and experience in a particular field (Ludwig, 1997; Martino, 1983). Thus, the selection of study participants was made carefully to minimise errors and to ensure reliability of findings. This is because the success of DT depends on the views and based on the information provided. Therefore, a panel of experts was identified through the nomination process, rather than randomly selected (Ludwig, 1997). Previous research suggested a panel of experts should be composed of those who have knowledge of the issues and perspectives on the subject to be studied in addition to be motivated to remain until the completion of the study (Linstone & Turoff, 1975).

Previous researchers suggested a minimum of seven experts for the DT expert panel, which is according to the original experiment by Dalkey and Helmer (1963). There are different views about the maximum size of the panel, which is not more than 12 participants (Cavalli-Sforza & Ortolano, 1984; Phillips, 2000), 15 participants (Delbecq, Van de Ven, & Gustafson, 1975; Linstone & Turoff, 1975; Martino, 1983) and 50 participants (Adler & Ziglio, 1996; Linstone & Turoff, 1975). Thus, this study has chosen 13 participants for the DT who meet the following conditions: (i) have at least a Master’s degree in shariah; and (ii) government mufti; or shariah advisers in IFI’s; or Muamalat researchers in Shariah research institutions; or Shariah professors at public universities. The size of these participants meets the size recommended by the majority of researchers, ranging from seven to 15 persons and it is in line with the average sample size, namely between 10 and 15 persons as proposed by Delbecq et al. (1975), and Adler and Ziglio (1996). The proposed number is also suitable for researchers because if the number of participants is too small, it does not reflect the targeted issue and if it is too large, it takes too much time of participants (Hsu & Sandford, 2007) and complicate the process of summarising their views (Linstone & Turoff, 1975; Ludwig, 1997).

Rounds
To reach an agreement, DT did not set rounds to be followed. Delphi rounds will end only when the panel of experts have
reached an agreement. This technique is usually done in three rounds (Ludwig, 1997) but it can be done between two to 10 rounds to get a strong consensus (Martino, 1983). This study used two rounds of the Delphi technique with the same expert panel. It only went through two rounds because it received agreement among the participants (Martino, 1983). This amount is also considered adequate because of differences in the views of experts have been reduced in the second round (Helmer, 1968).

The first round of Delphi sought to validate the data and to obtain consensus among the experts on the 34 items which are built based on a literature review. This process used a questionnaire through open response and closed response that can serve to obtain specific information about the content of the study. Data obtained was used to design the questionnaire for the next round. The second round of Delphi aimed at achieving agreement among experts about items that have not been agreed upon as well as new items proposed in the questionnaire for the previous round. Thus, a questionnaire on this round consisted of three parts, namely: (i) items that have not been agreed; (ii) items that have changed the structure of sentences; and (iii) new additional items. The instruments distributed to the panels for this round also contained feedback from the first round. Each participant may change their existing level of agreement in the first round so the score for the disparity of agreement among the experts can be bridged. However, they were not allowed to add any new items in the second round.

**Instrument**

This study questionnaire was designed from Shariah-Compliant Gold Investment instrument (SCGI-i) containing three-dimensions: (i) Investors and investment institutions (5 item); (ii) Products and prices (19 item); and (iii) Bidding contract (10 item). The questionnaire was used in each round of Delphi and suitable to analyse a large population (Konting, 1998). Before conducting the Delphi survey, the instrument was tested through a pilot study on two respondents. One of them is shariah advisory officer involved with the industry and the other is an expert involved in the academic field in Higher Education Institution (HEI). After updating the questionnaire, it was distributed to all experts which included two rounds of analysis.

The questionnaires contained items on the enclosed response in the form of a 4-point Likert scale, ranging from ‘Strongly agree’, ‘Agree’, ‘Disagree’ and ‘Strongly disagree’. The first round of the Delphi consisted of 34 items, while the second round contained 33 items. The main purpose of the questionnaire at this stage was to get the consent of experts through the questionnaires. Therefore, the researchers removed the questionnaire item that was not agreed upon which was later tested on the second round.
DATA ANALYSIS

Analysis of the Classical Delphi Technique (CDT)

Descriptive statistical analysis method is often used for CDT through the Measures of Central Tendency MCT (mode and median) and Interquartile Range Score (IQR). Data for descriptive statistics was analysed using SPSS software. Green (1983) puts the median at least 3:25 for a four-point scale. Size statistics for dispersion through the IQR was also used to determine the level of agreement among the experts. This study will use the level of the experts based on the IQR score agreement recommended by Siraj and Paris (2005) as shown in Table 2.

Table 2
Level of agreement among the experts according to Interquartile Range (IQR) score

<table>
<thead>
<tr>
<th>Interquartile Range (IQR) Score</th>
<th>Level of Agreement</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00 – 1.00</td>
<td>High</td>
</tr>
<tr>
<td>1.01 – 1.99</td>
<td>Medium</td>
</tr>
<tr>
<td>≥ 2.00</td>
<td>None</td>
</tr>
</tbody>
</table>

Analysis of the Fuzzy Delphi Method (FDM)

The FDM technique was introduced by Murray, Pipino and Gigch (1985), and adapted by Kaufmann and Gupta (1988) as a form of measurement for future research. It is an improvisation of the existing DT (Ridhuan, Siraj, & Zaharah, 2014) and generated effectively to obtain consensus among the experts without going through many rounds (Mohd Nazri, 2014). This study uses FDM to analyse data obtained in any round of DT. It is an analytical support to data obtained from DT expert panels. This study will use FDM to analyse data obtained in any round of DT. This method is done to maintain or drop an item. The item will be maintained if it meets two conditions, namely: (i) the value of d threshold of the item is equal to or less than 0.2 \((d \leq 0.2)\) (Chen, 2000; Cheng & Lin, 2002); and (ii) the percentage of agreement among experts is equal to or exceeds 75 percent \((\geq 75\%)\) (Chu & Hwang, 2008; Murry & Hammons, 1995). The value of d threshold is obtained by determining the distance between two fuzzy numbers using the following formula:

\[
d(\overline{m}, \overline{n}) = \frac{1}{\sqrt{3} \left( (m_1 - n_1)^2 + (m_2 - n_2)^2 + (m_3 - n_3)^2 \right)}
\]

RESULTS

The First Round of the Delphi

The results of the first round of the Delphi analysis showed reception, maintenance, improvements and additions to some SCGI-i items. In the “Investor and Institutional Investment”, the majority of participants had reached an agreement at a higher level on all items with the median score of 4.00 \((\text{mdn}=4)\) and the value of IQR at 0.00 to 1.00 \((\text{IQR}=0-1)\). High agreement was obtained for items A02, A04 and A05 which achieved a score of IQR=0, while the items A01 and A03 scored IQR=1. The majority of participants had also agreed that the “Goods and Gold Prices” with a high level of agreement to approve most of the items listed by mdn=4 and score IQR=0, namely for all the items except B05 and B17. There is a consensus among the experts at a moderate level to not
accept the two items with a score mdn=2 and IQR=1.5. However, both of these items are still retained in the questionnaire for the second round of analysis. In the “Gold Investment Offer Contract”, all the experts have reached an agreement to accept a high level for all the items, namely mdn=4 and IQR=0.

In summary, the first round of the Delphi showed a total of 33 items reached a high level of agreement among a majority of experts except the items with (IQR=0-1). Therefore, all these items were accepted as an instrument of CGI. There were two items (B17, C02) which experienced improvements in terms of sentence structure and two items (B05, B16) showing medium agreement among the experts. In addition, this round also gained a new dimension of proposed items “Gold Investment Offer Contract”:

“C11 Contract is no requirement to re-rent the gold to be sold to other parties.”

Fuzzy Delphi Method (FDM)
The results of the analysis for the value of $d_{item}$ are shown in Table 3. Table 3 shows the value of d threshold for each item ($d_{item}$) as well as a construct threshold value ($d_{construct}$) based on the expert consensus. A total of 32 out of 33 items was agreed by the panel of experts based on the condition $d \leq 0.2$ which means all the experts have reached consensus on the item. Only two items, namely B05 and B15, which did not reach an agreement because the value of $d$ for items that is 0.261 and 0.338, exceeded 0.2. Therefore, these items should be dropped or retained for the second round of Delphi analysis (Chen, 2000; Cheng & Lin, 2002). Ruling to reject items B05 and B15 according to the value of $d \leq 0.2$ is also supported based on the percentage of agreement among experts. The analysis of the number and percentage of agreement on the items is shown in Table 4.

Table 4 shows that 32 items have been accepted and two items have been rejected based on the percentage of agreement among experts; the latter is B05, which shows 46% agreement among the experts and 38% for B15. This decision is based on Chu and Hwang (2008), and Murry and Hammons (1995). The consensus of the experts is assumed to be achieved if the percentage of agreement between them is about $\geq 75\%$. Therefore, the analysis of FDM has supported the MCT in the first round of DT that there are 32 items which have reached provisional agreement for two items, namely B05 about “Gold transactions as separate items of gold, which is transacted” and items B15 about “Gold prices offered are not too expensive than the value of the current gold price”, which did not receive consensus among the experts.

The Second Round of the Delphi
The second round consists of 35 items including a new item (C11) have reached a high agreement (IQR=0) among experts, whether to accept or reject it. Two items that have not been agreed in the first round of the Delphi, namely B05 and B15 have reached a high agreement among the experts
Applying the Fuzzy Delphi Method (FDM)

Table 3
*Value of d threshold item in the first round of Delphi Technique*

<table>
<thead>
<tr>
<th>Items</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
</tr>
</thead>
<tbody>
<tr>
<td>A01</td>
<td>0.2</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.2</td>
<td>0.2</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.130</td>
</tr>
<tr>
<td>A02</td>
<td>0.2</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.2</td>
<td>0.2</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.130</td>
</tr>
<tr>
<td>A03</td>
<td>0.3</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.043</td>
</tr>
<tr>
<td>A04</td>
<td>0.3</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.048</td>
</tr>
<tr>
<td>A05</td>
<td>0.3</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.043</td>
</tr>
<tr>
<td>B01</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.000</td>
</tr>
<tr>
<td>B02</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.000</td>
</tr>
<tr>
<td>B03</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.000</td>
</tr>
<tr>
<td>B04</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.000</td>
</tr>
<tr>
<td>B05</td>
<td>0.3</td>
<td>0.1</td>
<td>0.6</td>
<td>0.1</td>
<td>0.3</td>
<td>0.6</td>
<td>0.1</td>
<td>0.3</td>
<td>0.3</td>
<td>0.1</td>
<td>0.1</td>
<td>0.6</td>
<td>0.1261</td>
</tr>
<tr>
<td>B06</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.000</td>
</tr>
<tr>
<td>B07</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.000</td>
</tr>
<tr>
<td>B08</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.000</td>
</tr>
<tr>
<td>B09</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.000</td>
</tr>
<tr>
<td>B10</td>
<td>0.3</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.3</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.080</td>
</tr>
<tr>
<td>B11</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.000</td>
</tr>
<tr>
<td>B12</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.3</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.043</td>
</tr>
<tr>
<td>B13</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.3</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.043</td>
</tr>
<tr>
<td>B14</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.000</td>
</tr>
<tr>
<td>B15</td>
<td>0.4</td>
<td>0.4</td>
<td>0.4</td>
<td>0.2</td>
<td>0.4</td>
<td>0.2</td>
<td>0.2</td>
<td>0.4</td>
<td>0.4</td>
<td>0.2</td>
<td>0.4</td>
<td>0.4</td>
<td>0.2338</td>
</tr>
<tr>
<td>B16</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.000</td>
</tr>
<tr>
<td>B17</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.000</td>
</tr>
<tr>
<td>B18</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.000</td>
</tr>
<tr>
<td>B19</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0343</td>
</tr>
<tr>
<td>C01</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.043</td>
</tr>
<tr>
<td>C02</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.043</td>
</tr>
<tr>
<td>C03</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.080</td>
</tr>
<tr>
<td>C04</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.043</td>
</tr>
<tr>
<td>C05</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.000</td>
</tr>
<tr>
<td>C06</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.043</td>
</tr>
<tr>
<td>C07</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.043</td>
</tr>
<tr>
<td>C08</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.080</td>
</tr>
<tr>
<td>C09</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.043</td>
</tr>
<tr>
<td>C10</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.080</td>
</tr>
</tbody>
</table>

Table 4
The percentage of agreement among experts in the second round of DT according to FDM analysis

<table>
<thead>
<tr>
<th>Items</th>
<th>Value of d items</th>
<th>A number of d items ≤ 0.2</th>
<th>Percentage of d items ≤ 0.2</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>A01</td>
<td>0.130</td>
<td>13</td>
<td>100%</td>
<td>Accepted</td>
</tr>
<tr>
<td>A02</td>
<td>0.130</td>
<td>13</td>
<td>100%</td>
<td>Accepted</td>
</tr>
<tr>
<td>A03</td>
<td>0.043</td>
<td>12</td>
<td>92%</td>
<td>Accepted</td>
</tr>
<tr>
<td>A04</td>
<td>0.080</td>
<td>11</td>
<td>85%</td>
<td>Accepted</td>
</tr>
<tr>
<td>A05</td>
<td>0.080</td>
<td>11</td>
<td>85%</td>
<td>Accepted</td>
</tr>
<tr>
<td>B01</td>
<td>0.000</td>
<td>13</td>
<td>100%</td>
<td>Accepted</td>
</tr>
<tr>
<td>B02</td>
<td>0.000</td>
<td>13</td>
<td>100%</td>
<td>Accepted</td>
</tr>
<tr>
<td>B03</td>
<td>0.000</td>
<td>13</td>
<td>100%</td>
<td>Accepted</td>
</tr>
<tr>
<td>B04</td>
<td>0.000</td>
<td>13</td>
<td>100%</td>
<td>Accepted</td>
</tr>
<tr>
<td>B05</td>
<td>0.261</td>
<td>6</td>
<td>46%</td>
<td><strong>Rejected</strong></td>
</tr>
<tr>
<td>B06</td>
<td>0.000</td>
<td>13</td>
<td>100%</td>
<td>Accepted</td>
</tr>
<tr>
<td>B07</td>
<td>0.000</td>
<td>13</td>
<td>100%</td>
<td>Accepted</td>
</tr>
<tr>
<td>B08</td>
<td>0.000</td>
<td>13</td>
<td>100%</td>
<td>Accepted</td>
</tr>
<tr>
<td>B09</td>
<td>0.000</td>
<td>13</td>
<td>100%</td>
<td>Accepted</td>
</tr>
<tr>
<td>B10</td>
<td>0.080</td>
<td>11</td>
<td>85%</td>
<td>Accepted</td>
</tr>
<tr>
<td>B11</td>
<td>0.000</td>
<td>13</td>
<td>100%</td>
<td>Accepted</td>
</tr>
<tr>
<td>B12</td>
<td>0.043</td>
<td>12</td>
<td>92%</td>
<td>Accepted</td>
</tr>
<tr>
<td>B13</td>
<td>0.043</td>
<td>12</td>
<td>92%</td>
<td>Accepted</td>
</tr>
<tr>
<td>B14</td>
<td>0.000</td>
<td>13</td>
<td>100%</td>
<td>Accepted</td>
</tr>
<tr>
<td>B15</td>
<td>0.338</td>
<td>5</td>
<td>38%</td>
<td><strong>Rejected</strong></td>
</tr>
<tr>
<td>B16</td>
<td>0.000</td>
<td>13</td>
<td>100%</td>
<td>Accepted</td>
</tr>
<tr>
<td>B17</td>
<td>0.000</td>
<td>13</td>
<td>100%</td>
<td>Accepted</td>
</tr>
<tr>
<td>B18</td>
<td>0.000</td>
<td>13</td>
<td>100%</td>
<td>Accepted</td>
</tr>
<tr>
<td>B19</td>
<td>0.043</td>
<td>12</td>
<td>92%</td>
<td>Accepted</td>
</tr>
<tr>
<td>C01</td>
<td>0.043</td>
<td>12</td>
<td>92%</td>
<td>Accepted</td>
</tr>
<tr>
<td>C02</td>
<td>0.043</td>
<td>12</td>
<td>92%</td>
<td>Accepted</td>
</tr>
<tr>
<td>C03</td>
<td>0.080</td>
<td>11</td>
<td>85%</td>
<td>Accepted</td>
</tr>
<tr>
<td>C04</td>
<td>0.043</td>
<td>12</td>
<td>92%</td>
<td>Accepted</td>
</tr>
<tr>
<td>C05</td>
<td>0.000</td>
<td>13</td>
<td>100%</td>
<td>Accepted</td>
</tr>
<tr>
<td>C06</td>
<td>0.043</td>
<td>12</td>
<td>92%</td>
<td>Accepted</td>
</tr>
<tr>
<td>C07</td>
<td>0.043</td>
<td>12</td>
<td>92%</td>
<td>Accepted</td>
</tr>
<tr>
<td>C08</td>
<td>0.080</td>
<td>11</td>
<td>85%</td>
<td>Accepted</td>
</tr>
<tr>
<td>C09</td>
<td>0.043</td>
<td>12</td>
<td>92%</td>
<td>Accepted</td>
</tr>
<tr>
<td>C10</td>
<td>0.080</td>
<td>11</td>
<td>85%</td>
<td>Accepted</td>
</tr>
</tbody>
</table>
Applying the Fuzzy Delphi Method (FDM)

(IQR=0) to not accept the item with mdn=2. Thus, both items were dropped from SCGI instrument. The experts also agreed at a high level (IQR=0; mdn=4) to approve items B18 and C02 with the change in the structure of sentences. In fact, all of the Delphi experts also agreed, at a high level, to approve the proposed additional items in the first round, namely C11 with a score of IQR=0 and mdn=4. Two items (B18, C02) which amended the sentence structure is accepted in SCGI instrument in addition to the new item (C11). As a result, the study, through the first and second round, managed to secure a total of 33 items which was agreed at a high level (IQR=0-1; mdn=4) by all the experts.

CONCLUSION

This study achieved the objective of establishing a SCGI-i which managed to obtain consensus among the experts in the field of Islamic Muamalat. The consensus score obtained, namely IQR=0.00 or 1.00 and mdn=4.00 is higher than the level set for this study (mdn<3.25). Consensus among the experts, which includes three dimensions and 33 items are obtained in the second round of the (DT). The SCGI-i can be used by IFIs to create new products or sharia audit of existing gold investments to comply with the requirements of Islamic Muamalat.

REFERENCES


Berita Harian. (2012, October 2). 50,000 pelabur terjerat [50,000 investors are trapped]. Berita Harian, p. 3.


Applying the Fuzzy Delphi Method (FDM)


Norlaili, A. (2012, August 1). 77 Syarikat pelaburan tidak sah [77 Investment companies are invalid]. *Utusan Malaysia*, p. 16.


Consumers’ Perception of Islamic Credit Cards: An Exploratory Study

Johan, Z. J.1,2*, Hussain, M. Z.3, Putit, L.1, Dali, N. R. S. M.2 and Hafit, N. I. A.1

1Faculty of Business and Management, Universiti Teknologi MARA (UiTM) Puncak Alam Campus, 42300 Bandar Puncak Alam, Selangor, Malaysia
2Universiti Sains Islam Malaysia (USIM), Bandar Baru Nilai, 71800 Nilai, Negeri Sembilan, Malaysia
3Islamic Financial Planner Certificant, 40150 Shah Alam, Selangor, Malaysia

ABSTRACT

The growth and development of Islamic finance in Malaysia vis-à-vis the conventional finance has been supported by the comprehensive regulatory framework and a conducive environment. Despite the favourable operating environment, and commendable performance of certain Islamic financial products and services, a majority of financial services consumers is still pursuing conventional banking products. Their lack of acceptance of Shariah compliant banking products is attributable to many factors; including lack of knowledge and awareness of Shariah compliant issues, which has given rise to scepticism and continued misperception of the products as well as bankers’ approaches to product and market development of Islamic financial products and services. This exploratory study is aimed at identifying consumer acceptance of Islamic Credit Cards (ICCs) and the determinants of their acceptance. The variables tested were attitude, knowledge, perceived benefits, brand reputation and Shariah compliance. Since Islamic banking products are meant for all, it is timely to highlight the focal point of Shariah compliance as the main attribute. This study also provides further insights into understanding consumers’ acceptance of ICCs.

Keywords: attitude, acceptance, Islamic financial products, knowledge, Shariah compliance

INTRODUCTION

Malaysia is among the fastest growing and most competitive in developing and producing Islamic financial products and services catering to market demand. As a result, it has triggered the need for financial institutions to be robust and dynamic in developing and diversifying Islamic
products as well as strengthening their skills in promoting and marketing the products. The Islamic Financial Services Act (IFSA) was established in 2013 to provide an effective legal framework and foundation in the development of Islamic finance sector. The act is an improvement to the Islamic Banking Act 1983 and Takaful Act 1984. It has a comprehensive regulatory framework covering the specifications and requirements of a variety of Islamic financial contracts. Moreover, IFSA contains a provision on the application of Shariah contracts to the Islamic financial products and services offered in the market.

However, even with the government’s strong support for Shariah compliant products, particularly among Muslims who form the majority of Malaysia’s population, consumers are still pursuing conventional products. Despite the strong support from Malaysia’s central bank, Bank Negara Malaysia (BNM), Islamic Financial Services Board (IFSB) and Malaysia International Islamic Finance Centre (MIFC) in spearheading the development of Islamic banking and finance offerings, the Shariah compliant banking products have been labelled as merely copying conventional products by replacing key terminologies with Islamic ones. Although Islamic banking industry has improved tremendously in terms of its services and regulation (e.g. the establishment of Islamic Financial Services Act of 2013), consumers are still sceptical about the products, and hence their lack of interest in them.

One of it is the Islamic credit cards (ICCs) which account for less than 10% of the total credit cards in circulation in Malaysia. They had total transactions amounting to RM2744.2 million compared with 9.2 million for conventional credit cards (CCCs) in circulation with total transactions of RM33,815.5 million as of February 2017 (Bank Negara Malaysia [BNM], 2017). A senior officer at an Islamic bank in Malaysia claimed that 70% of its customers are non-Muslims and he admitted to having a tough time selling the product to Muslim customers as they have doubts and uncertainties towards its legitimacy (Ahmed, 2011).

Al-Taslif Islamic credit card was first introduced by AmBank Islamic in 2001, followed by Bank Islam Card of Bank Islam Malaysia Berhad in 2002. There are several other credit cards in the market e.g. Al-Aiman by Bank Simpanan Nasional and Ikhwan by Maybank. These ICCs are Shariah compliant and have been offered by the respective banks for a number of years. Being relatively new in the market, they face stiff competition from the established and widely known conventional credit cards (CCCs). This is particularly true in marketing, promotion, branding, product innovation, and communication of compelling features and benefits. Similarly, some consumers raise concerns on the authenticity of ICCs, especially on Shariah compliance (Al-Salem, 2009). Their presumption is that ICCs are just replicating CCCs with a cosmetic touch up of profit rate substituting for the interest rate, which has tarnished the reputation of ICCs (Anwar,
Likewise, the negative perception of Islamic banking institutions in Malaysia, not being well equipped in marketing, promoting, and providing awareness to the public, is putting immense pressure on the ICCs to stay competitive.

Hence, this study is timely in exploring the perception of consumers towards the acceptance of ICCs, and to identify the determinants influencing their acceptance.

The paper is organised into five parts: introduction, literature review of each construct, methods, results, and discussion and conclusion.

LITERATURE REVIEW

Theory of Planned Behaviour

Theory of Planned Behaviour (TPB) is an extension of Theory of Reasoned Action (TRA), and has been robustly tested and found to be valuable in predicting a wide range of behaviour. It postulates three conceptually independent determinants of behavioural intention - attitude, subjective norm and perceived behavioural control. Many studies have applied TPB in behavioural adoption of many disciplines e.g. health sciences, marketing, halal food and services, Islamic banking and finance, Information technology, and online banking adoption.

The main features of Theory Planned Behaviour (TPB) are its salient beliefs. Behavioural beliefs influence attitude, normative beliefs are factors for subjective norms and control beliefs are insights for behavioural control. These are deemed to be the dominant aspects of a person’s intentions and actions (Fishbein & Ajzen, 1975). The TPB highlights these beliefs that act as a guide for the action to perform or not to perform a particular behaviour. First, “people hold beliefs about the positive or negative consequences they might experience if they perform the behaviour” (Fishbein & Ajzen, 2010, p. 20). The assumption that underlie behavioural beliefs determine people’s attitude towards performing the behaviour. Second, people form beliefs that those who are significant to them, both individuals and groups would approve or disapprove their action of a particular behaviour or beliefs. Third, people develop beliefs from personal and environmental factors which help or hinder the attempts to perform the behaviour. Control beliefs are based on high or low self-efficacy or perceived behavioural control relating to the behaviour while efficacy beliefs affect people’s feeling, thinking, behaving and motivating themselves (Bandura, 1997). Behavioural belief that will be discussed in-depth in this study is attitude.

Attitude

Attitude is affective in kind and is determined by a person’s belief on the object, whether a person has positive or negative belief towards the object (behavioural beliefs) and evaluation of the behaviour (positive or negative outcome or acceptance). The fundamental idea is to predict certain behaviour and it is also important to measure the person’s attitude toward performing that behaviour. According to Ajzen and Fishbein (2005, p. 56), attitude is “a person’s
judgement that performing the behaviour is good or bad, which he is in favour of or against performing the behaviour”. Attitude towards Islamic banking is relevant and which could predict consumer behaviour (Butt & Aftab, 2013). The pertinence of attitude is affirmed by Souiden and Rani (2015) where attitude toward Islamic bank is positively and significantly related to purchase intention. Therefore, a bank’s commitment to conform to the Shariah law is believed to be an element that can influence consumers’ attitudes in accepting its products and services.

Knowledge
When the public has relevant information or knowledge pertaining to specific features i.e. Shariah compliance, they will have the ability to control their intention to conform to the requirement of not associating themselves with riba, maysir and gharar. Even though the convenience factor of conventional banking prevails, customers will have the chance to perform a check and balance in terms of benefits for the present time and also hereafter. With the purpose of assisting societal economic well-being, the maqasid al-shariah has the built-in obligation for Muslims in helping society and country as a whole.

Knowledge related to Islamic banking products and services has been discussed extensively in previous studies. “Knowledge tests are designed to assess the information people have about a certain topic. When respondents agree or disagree with knowledge items, they essentially express their beliefs with respect to the topic in question” (Fishbein & Ajzen, 2010, p. 244). Erol and El-Bdour (1989) reported that employees at Islamic banks were relatively less efficient and lacked experience in Islamic banking products. A 2014 study of Shariah compliance revealed poor knowledge of Shariah among the Islamic banking officers in Bangladesh (Ullah, 2014). This deficiency was affirmed by Awan and Bukhari (2011) who revealed bankers’ inadequate knowledge in providing and convincing customers on Shariah compliant features of Islamic banking. Marimuthu, Jing, Gie, Mun and Ping (2010), and Ismail et al. (2013) recommended that Islamic banks should hire experienced and professional bankers who can contribute to product knowledge and expertise and this could be an essential tool in educating customers to convince them to accept Islamic banking products and services.

Source of knowledge. All financial institutions should have adequate knowledge of products and services offered in order to effectively respond to customer inquiries. Customer awareness of Islamic banking products and services is also important. A study on patronage factors of Malaysians toward ICC defined knowledge of ICC (independent variable) as Shariah principles, interest-free Islamic finance product and general knowledge of ICC. It also disclosed knowledge as one of five significant variables at a 1% significance level (Amin, 2012). In fact, knowledge influences acceptance of a particular product or service; the greater the
customer’s knowledge of Shariah compliant financing facility, the higher the chance the customer will accept the product.

**Perceived Benefits**

When it comes to benefits, customers expect the ICCs to offer additional advantages compared with CCCs. Chandon, Wanshink and Laurent (2000), and Tingchi Liu, Brock, Cheng Shi, Chu and Tseng (2013) stated that perceived benefits represent beliefs regarding positive outcomes associated with behaviour upon responding to a real or perceived threat. In order to understand consumption behaviour, the construct of perceived benefit of buying, more often than not, is applied to normal shopping behaviours, with specific focus on an individual’s perception of such benefits, to which they will produce satisfaction by engaging in a specific shopping action (Tingchi Liu et al., 2013). Li, Cheng and Rusell (1999) proposed three major benefits of online shopping: price; convenience, and recreational. Nevertheless, such perspectives on benefits may also be applicable in other disciplines, such as in the financial products. From a credit card standpoint, customers will look for benefits of paying lower interest, as well convenient and efficient services provided by credit card service providers. As ICCs have profit charges which are calculated up front and fixed throughout the financing period, customers are definitely paying less on monthly charges (Amin, 2013). On the other hand, a study on credit card preferences revealed that ICC is favourable due to its cost and benefits, while CCC is preferred for its convenience and reward point programme (Mohd Dali, Yousafzai, & Abdul Hamid, 2015). Nevertheless, credit cards have the competitive advantages, in which the customers can experience the benefits only when they utilise the card.

**Brand Reputation**

Brand reputation plays a vital role in consumers’ acceptance of ICCs. Currently, customers prefer established international credit cards e.g. Citibank and HSBC that can be used both internationally and locally. Veloutsou and Moutinho (2009) opined that consumers may form relationships with brands on the basis of several characteristics of these brands and their perceptions and behaviour towards them. One of them is brand reputation which is defined as a comprehensive judgement as to how an organisation is viewed and held in high esteem or regard (Weiss, Anderson, & MacInnis, 1999). Additionally, brand reputation is considered very important in the service sector mostly because a strong brand reputation increases customer trust, provides better understanding of intangible products, and reduces customer’s buying risks (Abdullah, Putit, & Teo, 2014; Peng & Wang, 2006). Zhang and Feng (2009) on the other hand, argued that brand building does not only serve as a vital driving force for the marketing of physical products but it is also an important element for service firms such as banking and financial institutions. Likewise, brand reputation is likely to be formed by customers via informal methods.
such as word of mouth, a company’s public reputation, and verbal communication. Therefore, a positive brand reputation is posited to meet customer’s expectation in terms of offering more benefits, which may then lead to subsequent trust, satisfaction and brand loyalty.

**Shariah Compliance**

Islamic principles and criteria of Shariah must be observed and complied with by financial institutions in all their Islamic financial products and instruments. Shariah compliance is a set of principles of rights and obligations for Islamic banks to adhere to in order to gain credibility and integrity as ethical based institutions (Hidayah, 2014). Islamic banking and finance has enriched its products and services by strengthening its Islamic identity not only through terminology (Khan, 2010) but also by complying with Shariah principles which is essential in the development of Islamic financial services. The unique features of Shariah is the key to the effective functioning of Islamic banks in competing with the conventional banks in terms of profitability, liquidation, capitalisation, and less credit risk (Khediri, Charfeddine, & Youssef, 2015).

In Islamic finance, there are certain activities which are classified as non-permissible and sinful (haram). These activities include alcohol related products, pork products, gambling, tobacco, arms and munitions, and adult entertainment (Ibrahim, Ong, & Akinsomi, 2012). As one of the pioneers in Islamic finance, Malaysia has been proactively developing a complete Islamic finance ecosystem focusing on Shariah compliance in legal prudential, operational and governance matters (MIFC, 2014).

**Shariah compliance of ICC.** There are a few distinguishing features that differentiate ICC from CCC. These features related to Shariah compliance. Amin (2013) highlighted the distinguishing features of ICC compared with conventional ones. There are three main criteria: non-compounding, fixed profit margin and compliance with Shariah. In addition, Mohd Dali and Yousafzai (2012) found that the prohibition of interest is a major factor why customers choose ICC. Mohd Dali et al. (2015) also found that the ICC users are highly religious individuals. Likewise the Islamic banking service quality (SQ) dimensions of compliance with Islamic law and operating with Islamic banking and economic principles (Othman & Owen, 2001) are important factors for their acceptance.

The current ICCs in Malaysia are deemed to be Shariah compliant as they are issued based on the concepts and product structures of tawarruq and ujrah, which have been approved by the card issuer’s bank Shariah Board upon meeting the Shariah standards and compliance criteria. Only two banks offer tawarruq structure of ICCs, Bank Islam and Bank Rakyat. Both are full-fledged Islamic banks in Malaysia. While the dual banking AmBank, CIMB, RHB and Maybank provide ujrah structure of ICCs. Tawarruq structure of ICC is the...
sale of a commodity (e.g. crude palm oil) to a customer on deferred payment. The customer will first sign a *wa’ad* (promise) for the bank to purchase the commodity and subsequently sell it to the customer on *Murabahah* contract at sale price (cost plus profit) on differed payment. The bank will then sell the commodity to an appointed broker on a cash basis. On the other hand, *ujrah* (fee on service) structure of ICCs is for financing an amount or the credit limit offered by the bank. The financing amount that has not been settled in full on or before the due date is subjected to management fees.

Upon fulfilment of the *Shariah* structure, the cards are ready to be activated and utilised by customers with the condition that the cards are used to purchase *halal* merchandise and services which are in line with Islam. There are several studies that attempted to use *Shariah* compliance as antecedents to customer satisfaction such as Mohd Dali and Yousafzai (2012) and Mohd Dali, Yousafzai and Abdul Hamid (2014), and preferences of Islamic credit cards compared with conventional credit cards involving *Shariah* characteristics (Mohd Dali et al., 2015).

**METHODS**

At the beginning of this study process, with little or no previous knowledge of ICCs, explanatory research was conducted to understand the situation and gain ideas and insights into the study problem (Malhotra & Birks, 2007). A few observations were conducted by the researchers to fully understand the subject of interest. Focus group was the method of study chosen in order to better understand participants’ experience and beliefs (Morgan, 2015). The main criteria for method selection was topic of interest and data was later analysed using other methods (Bloor, Frankland, Thomas, & Robson, 2001).

**Participants**

The participants of the study were bank customers who were located in Klang Valley and were aged between 33 and 55 years. They included current CCC holders and non-credit card holders. They were solicited first via phone calls, followed by formal invitation via email explaining the purpose and objective of the focus group. This study explored the perception of consumer towards the acceptance of ICCs and identified the determinants influencing the acceptance of ICC’s consumer.

**Instrument**

The respondents were given open ended questions by the appointed moderator. The total numbers of individuals involved in the focus group were six and two conventional credit card users and non-credit card users respectively. The focus group interview was held using a semi structured format. It had five parts: demographic profiling, attitude, knowledge, *Shariah* compliance, and determinant factors of ICC acceptance. The discussion with the respondents lasted approximately 120 minutes. The focus group was audio and video recorded and was later transcribed. Since some of the respondents...
answered the questions in both English and Malay languages, the recording and the field notes were transcribed using both languages. The five parts are as follows:

1. **Demographic profiling**
   - Age, gender, religion, ethic group, position etc.

2. **Attitude**
   - What do you think of Islamic credit card?

3. **Knowledge**
   - Can you tell us what Islamic credit card is?
   - How did you get to know about Islamic credit card?

4. **Shariah compliance**
   - What is your understanding of Shariah compliance?
   - Do you think Islamic credit card comply with Shariah?

5. **Determinant factors of Islamic credit card acceptance**
   - What are the factors influencing the acceptance of Islamic credit card?
   - If you have knowledge about Islamic credit card, would you accept the card?

**Data Analysis**

The focus group interview was audio and video recorded which later was transcribed applying ATLAS TI 7. The transcription process involved repetitive listening and watching recorded video which are important steps in data analysis. The next step was the coding process which involved recognising vital themes by capturing qualitative richness of phenomena followed by related encoding before interpretation of data to achieve a holistic understanding of the meaning of each participant’s experience (Fereday & Muir-Cochrane, 2006). The thematic analysis is an exploration of patterns identified in the data, leading to the recognition of emerging themes that become the categories of analysis (Fereday & Muir-Cochrane, 2006). The focus group interview discovered several themes i.e. attitude, knowledge, perceived benefits, brand reputation, Shariah compliance and acceptance.

**Respondents**

Table 1 shows the profile of respondents.

**RESULTS**

**Attitude**

It is interesting to note that regardless of whether the credit card was conventional or Islamic, respondents chose credit cards that could give them the best deal in terms of benefits. It is perplexing that the majority of the respondents, who are Muslims, still have doubts about ICCs and claim the cards are not much different from conventional cards in terms of the charges. As highlighted at the beginning of the paper, Muslims customers are still uncertain about the validity of Islamic banking products and services (Ahmed, 2011). Below are the responses from Muslim conventional credit cards holders:

"…..normally the conventional
would have efficient, better system, better selling of the credit card as compared to the Islamic banking...”
(Respondent D)

“I know that this is Islamic credit card; yes, no interest but I still don’t want to change my credit card.”
(Respondent F)

“Because some of the conventional cards have lower interests as they use BLR and so on. So, that’s why I’d think that sometimes the Islamic is no different in terms of profit as well as certain prohibitions in using it. I’d say that it’s OK for me to use and still continue using conventional as of now.”
(Respondent H)

Respondent D chose CCCs for its many advantages, namely better selling, convenience and worldwide acceptance. Respondent F was aware of the main features of ICC and yet still pursued CCC while respondent H believed ICC was no different from CCC. The following were the responses from the Non-Muslim conventional credit card holders:

“I think maybe if we get the guideline of what we can do and what we cannot do using Islamic card, so at the same time we can get maximum benefit and we know what we can purchase and what we cannot purchase.”
(Respondent A)

“I think we choose the best deal. I mean it does not matter whether it’s conventional or ICC.”
(Respondent C)

“For me both conventional and Islamic are actually the same. End up we still have to pay. We spend more we pay more whether they charge you interest or riba.”
(Respondent E)

Likewise, the Non-Muslims were proactive in the sense that if ICC was properly promoted and marketed, they

Table 1
Profile of respondents

<table>
<thead>
<tr>
<th>Respondent</th>
<th>Age</th>
<th>Gender</th>
<th>Religion</th>
<th>Ethnic</th>
<th>Position</th>
<th>Are you a credit card holder?</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>33</td>
<td>M</td>
<td>Buddha</td>
<td>Chinese</td>
<td>Middle management</td>
<td>Yes, Conventional</td>
</tr>
<tr>
<td>B</td>
<td>38</td>
<td>F</td>
<td>Islam</td>
<td>Malay</td>
<td>Management and professional</td>
<td>No</td>
</tr>
<tr>
<td>C</td>
<td>43</td>
<td>M</td>
<td>Buddha</td>
<td>Chinese</td>
<td>Senior management</td>
<td>Yes, Conventional</td>
</tr>
<tr>
<td>D</td>
<td>43</td>
<td>F</td>
<td>Islam</td>
<td>Malay</td>
<td>Management and professional</td>
<td>Yes, Conventional</td>
</tr>
<tr>
<td>E</td>
<td>55</td>
<td>M</td>
<td>Buddha</td>
<td>Chinese</td>
<td>Senior management</td>
<td>Yes, Conventional</td>
</tr>
<tr>
<td>F</td>
<td>36</td>
<td>F</td>
<td>Islam</td>
<td>Malay</td>
<td>Management and professional</td>
<td>Yes, Conventional</td>
</tr>
<tr>
<td>G</td>
<td>35</td>
<td>F</td>
<td>Islam</td>
<td>Malay</td>
<td>Management and professional</td>
<td>No</td>
</tr>
<tr>
<td>H</td>
<td>35</td>
<td>M</td>
<td>Islam</td>
<td>Malay</td>
<td>Management and professional</td>
<td>Yes, Conventional</td>
</tr>
</tbody>
</table>
would not mind using ICC as long as they were clear on the guidelines or the dos’ and don’ts of utilising the credit cards. While non-Muslims were flexible in accepting ICCs, having the option of comparing both cards and choosing the best credit card for them, Muslim respondents were not convinced about the ability of ICCs and still had suspicions about the characteristics of the cards in complying with Shariah. Therefore, it has affected the Islamic credit card’s acceptance (Rosly, 2010).

Knowledge

There were a number of explanations provided by the respondents regarding Islamic credit card (ICC). Most of the respondents agreed that ICCs were strictly based on Shariah compliance and there was no interest charged.

Respondent B affirmed that “ICC is based on the Shariah with no interest...” while Respondent G and F mentioned that “ICC must be Shariah compliant... there is no riba or interest”. Meanwhile respondent H also agreed by saying “...some transactions would not be allowed, such as gambling, buying liquor, going to club...”

Respondent A stated his opinion that “ICC may waive interest on delayed payment ...” Meanwhile respondent E said that “......ICC can save on interest...”

These statements show that most of the respondents shared similar thoughts regarding the Islamic credit card. Nevertheless, Respondent C and D claimed “banks have no guidelines for ICC...it is a grey area for consumers” and “most Islamic banks have not been proactive enough in promoting the ICC...”

Thus, it can be inferred that besides the credible factor of complying with Shariah, there is still lack of ICC promotional and marketing activities.

Respondents B, C, F, G and H were able to describe simple components of ICC i.e. based on Islamic law, based on Shariah principle, must be Shariah compliant and no riba or riba free. However, respondent E thought that there was no difference between ICC and CCC but that ICC would be better than CCC. Likewise, respondent D had been utilising CCC for quite sometimes and was not able to tell what ICC was. Respondent A was not really sure about ICC but was able to describe the benefits of payment delay and waiver.

Source of knowledge. According to respondent A and F, they only knew about ICC from the bank’s website while most banks’ road shows promoted conventional credit card (CCC) instead of ICC. Respondent B and G noted that “...get to know about Islamic credit card from friends and through readings...never through bank personnel...” and “I got to know Islamic credit card from friends...”

Other respondents added that they knew about ICC from banking hall, road shows but respondent C claimed “...they were not widely promoted because I am non-Muslim” while respondent D stated that “bank is not introducing its product extension that is Islamic credit card, even though I have saving account within the
same bank.” Respondent G also claimed that “...although my bank account is CIMB Islamic, I was not offered its credit card.”

Respondent C expressed his view that some bank personnel did not introduce the ICC to non-Muslims as some of the transactions were prohibited. He stated “…if banks were to promote Islamic credit card, they need to tell the benefits of Islamic credit card and people will have clearer picture about it.” Respondent E agreed with C’s opinion and suggested banks introduce the credit card to capture the non-Muslim market.

Overall, respondents had basic knowledge of ICC. -They had encountered the product through different means, similar to CCC, but not as extensive and widely promoted as the counterpart CCC. Two of the respondents claimed that they had never been approached by any sales team promoting the product. They also added that they had hardly seen any road shows for ICCs but only CCCs, which was done rigorously during marketing and promotion. It can be summarised therefore, that most of the respondents were aware of the ICC existence from bank websites and road shows as well as word of mouth. Nevertheless, ICCs are not widely and aggressively promoted compared with CCCs (Awan & Bukhari, 2011).

Lastly, respondents were asked if they had the knowledge and information about ICC, would they consider accepting the card and the responses were: “Surely, yes”, “…now I have clear explanation on Islamic credit card….yes!”, “I would consider”, “Yes” and “I will accept”. Customers’ knowledge on product specification, features and benefits of ICCs are crucial in determining their acceptance of the product.

**Perceived Benefits**

Most of the respondents admitted there was no difference between CCC and ICC in terms of cost and interest. Respondent B stated “I did not see the saving cost and no differences from both...” while respondent H opined that “Islamic credit card and conventional credit card would be not much different...conventional credit card interest is cheaper because of the BLR...” Other than that, respondent G commented “I do not know what is being offered in Islamic credit card.” As a result, respondent A suggested “If we get the guidelines of what we can do and what we cannot do on Islamic credit card...at the same time we can get maximum benefit...good for consumer.” Respondent C also agreed that “bank need to tell the customer, the best offer to the customer.”

Other respondents were a bit sceptical about the maximum benefits offered by Islamic credit card. For instance, respondent H mentioned “I know that there is certain limit of having credit card so why must I let go my existing credit card to get a new Islamic credit card?” Respondent E also indicated ‘both conventional credit card and Islamic credit card, by the end we still need to pay...’ while respondent B claimed “I have to choose the one that would give me more profit...in the sense of paying less and more saving.” Similarly, respondent H
emphasised an explanation of the benefits and services by the bank’s staff can influence acceptance of ICC (Putit & Johan, 2015).

Respondent C suggested that “...to sell Islamic credit card, you have to position yourself not like a religion kind of thing... actually it is a financial service that Islamic way...” adding “I think...we can choose the best deal...whether it is conventional credit card or Islamic credit card.” Respondent D concluded that ‘conventional credit card has more efficient and better system, better selling of credit cards as compared to Islamic banking...in-terms convenience and acceptance...’

Brand Reputation
The use of the brand for a product or service is essential to attract the attention of consumers. Additionally, the product features and benefits are seriously considered by the bankers to attract new and existing consumers. Respondent E agreed that branding and reputation of the banks is important. Thus, the respondent believed that ICC can break the barrier within next five years and said “I think Islamic card has potential to grow.” A brand will be tarnished due to poor sales performance and services, which will later affect the bankers gaining consumer confidence (Dusuki & Abdullah, 2007). The consumer’s first impression is very important for the bankers to market ICCs. As respondent D stated “Normally the conventional would have more efficient, better system, better selling of the credit card as compared to the Islamic banking.” From the above statements, most respondents confirmed that ICC is for all but their benefits should be emphasised and highlighted in the marketing and promoting strategy.

Shariah Compliance
Respondents A, C, G, H and E had no clue of what Shariah compliance is, while respondents B, D and F were able to describe the basics of no riba and halal transactions in Shariah compliant requirements. It is a perplexing point when some the respondents were capable of describing ICCs as having to comply with Shariah in the first question of the knowledge variable but were unable to explain the meaning of Shariah compliance, even though some of them did explain the term (Arman, 2013). In general, the participants did not understand the terminology Shariah compliance particularly, when it is the foundation of ICCs. Likewise, respondent C said a local bank staff stated the banks may not want the non-Muslims to use the credit card because they may purchase non-halal products. This is judgemental and prejudicial towards the non-Muslims. Therefore, bankers ought to be more cautious on expressing religious sentiments and avoid insensitivity especially when they themselves lack product understanding (Schlegelmilch, Khan, & Hair, 2016).

DISCUSSION AND CONCLUSION
From the feedback and answers given by the respondents, despite the guideline directive from BNM for Islamic banks to sell and promote Islamic banking products

Consumer’s Perception of Islamic Credit Card Acceptance

and that fact that many of the Islamic banks are subsidiaries of conventional banks, in general the marketing, promotion and awareness are still lacking. On the other hand, it is also judicious to revive and revitalise the ICCs features and benefits with new a marketing approach and a new image.

Similar to the concept of halal, it could be sensible to highlight Shariah compliance instead of Islamicity of the credit card. Respondent C, a non-Muslim proposed a brilliant suggestion of “for you to sell Islamic credit cards, you have to position yourself not like a religion kind of thing. It’s financial service the Islamic way”. The non-Muslim consumers are defined as those who to (a) adhere to faiths other than Islam, (b) buy products that are certified and labelled halal, and/or (c) buy products that are known to be associated with Islamic countries (Alserhan, 2011, p.117).

The behavioural belief i.e. attitude of Theory of Planned Behaviour (TPB) does play an important role as it leads to performing behaviour as recommended by (Ajzen, 1991). From this exploratory study, it was found knowledge, source of knowledge, perceived benefits, and brand reputation influence consumers attitudes toward ICC acceptance.

A previous study conducted by Mohd Dali and Yousafzai (2012) on seven Muslim respondents examined why they chose ICC and it was found it was due to its Shariah compliance. The qualitative study also discovered that religion is an important role in ICC acceptance. On the other hand, a quantitative study by Amin (2013) who surveyed 257 respondents revealed attitude, subjective norm and perceive financial cost strongly influenced their intention to choose ICC. It is interesting to note that the respondents for this focus group preferred the best deal that they could get from credit cards regardless of whether they were Islamic or conventional. Could the best deal be the cost-saving on credit cards from which the customers can benefit? In fact, ICCs are riba-free and the calculation of profit is made known to customers in sale and purchase price, together with other features i.e. reward points and insurance coverage. Hence, ICCs will be able to project the brand image of “Best deal Shariah compliant credit card”.

As respondent E pointed out “You must lay out what is the benefit you get in the Islamic credit card”.

Since Islamic banking products are meant for all, it is timely to emphasise and highlight the focal point of Shariah compliance on banking products and services as the main attribute followed by features and benefits of the particular product (Johan, Putit, & Syed Alwi, 2014). Perhaps the bankers have to amend the name Islamic credit card or credit card to Shariah compliant credit card which carries the weightage of Shariah compliance, hence focusing on the product and process instead of Islamicity. The modification may shift the perception of customers to accept ICCs, similar to Takaful, a Shariah compliant insurance scheme without applying the word Islamic.
Limitation of Study
This was an exploratory study which was conducted based on one focus group interview with eight respondents who were existing credit card holders and non-credit card holders. They were selected based on a convenient sampling approach in Klang Valley. It is possible that their attitude, knowledge, perceived benefits, brand reputation and Shariah compliance may differ from those of the general population. Further research which are two focus groups and quantitative study, may be required to fully understand the determinants of ICC acceptance among Muslims and non-Muslims. A bigger sample size and targeting non-Muslim customers of Chinese and Indian origins as well as other ethnic groups will be useful to understand factors influencing ICC acceptance.

Expected Contribution
The initial findings from this study which explored variables such as attitude, knowledge, perceived benefits, brand reputation and Shariah compliance will contribute to new theoretical knowledge of an extended behavioural model in relation to customer perception of ICC acceptance. In terms of managerial implications, the findings will further assist financial service providers to develop more effective marketing strategies of the Islamic financial products not just to cater to the Muslims, but also the non-Muslims who are increasingly attracted to Islamic banking and finance products and services. It is crucial to note that customers’ acceptance of ICC rely on attitude, knowledge, perceived benefits, brand reputation and Shariah compliance. By addressing and predicting such attributes, financial marketers are expected to be well prepared and knowledgeable on the different Islamic product structures. This is to enable them to enlighten and create awareness among consumers in seeking halal compliant financial related products.

Subsequently, for practical implications, banks need to pay attention to their legitimacy in terms of Shariah compliance as well as to their communication policies to attract potential users. Bank managers should choose informative and persuasive ads that highlight “Islamic products”. It is recommended that users are informed via promotional campaigns that Islamic institutions are always monitored by the “Shariah Committee”, which assures that all transactions and banking activities are in line with Shariah principles. These can attract consumers who desire Islamic banking services.

Community education plan and a consistent awareness campaign are important to raise the understanding and consumer trust in Islamic credit cards. Banks need to increase their promotional efforts, to instil Islamic banking culture by paying particular attention to their communications message, providing detailed, useful, and clear information on the functioning of Islamic banking and why they will benefit from them and for the country’s economic and social development. In addition, the study provides guidelines for relevant government agencies and regulators of
Consumer’s Perception of Islamic Credit Card Acceptance

financial institutions on the provision of services relating to Halal Compliant Financial Products.

REFERENCES


Souiden, N., & Rani, M. (2015). Consumer attitudes and purchase intentions toward Islamic banks:
Consumer’s Perception of Islamic Credit Card Acceptance


Regulating Polygamous Marriage to Prevent its Abuse: A Case Study of Malaysia


Academy of Contemporary Islamic Studies (ACIS), Universiti Teknologi MARA (UiTM), 40450 Shah Alam, Selangor, Malaysia

ABSTRACT

Regulating polygamous marriage is essential to preserve the sanctity of the marriage institution. As marriage in Islam is a religious contract, restricting polygamous marriage is vital to ensure marriages serve their holy purposes. In Malaysia, several provisions are incorporated in the Islamic Family Law Act /Enactment to control the practice of polygamous marriage. Yet, cases of abuse do occur in such marriages affecting the stability of the family. This paper therefore, aims to analyse the weaknesses of the mechanisms governing polygamous marriage from a legal and administrative perspective. Recommendations are made to formulate better laws and procedures to minimise such abuses. A combination of library research and semi structured interviews are employed in this study as both methods highlight important weaknesses in the current legal and administrative mechanisms. The findings of this research reveal important flaws in the present governance of polygamous marriage that have led to abuses. These findings can be an eye opener for the relevant authorities in identifying causes of abuse in polygamous marriages. Therefore, current laws must be reformed to ensure abuses do not occur in such marriages.

Keywords: Abuse, Malaysia, Marriage, Muslims, polygamous

INTRODUCTION

Polygamous marriage was prevalent in the pre-Islamic era. A man was absolutely free to take more than one wife and the marriage was entirely unrestricted, as there were no rules or restrictions regarding polygamy (Hammudah, 2008, p. 99; Jawwad, 1993, p. 534). However, when Islam was introduced, it restricted the number of wives a man may
have concurrently to four. The Qur’an also allowed a man to practise polygamy with the condition that he can be equitable to all his four wives. As stated in the Qur’an, “…marry women of your choice, two or three or four; but if ye fear that ye shall not be able to deal justly (with them), then only one,” (Qur’an, al-Nisa’ (4): 3). Polygamy in Islam is neither mandatory nor encouraged, but merely permitted. Allah said in another verse, “you are never able to be fair and just as between women, even if it is your ardent desire…” (Qur’an, al-Nisa’ (4): 129). The combination of these two verses shows discouragement of such plural marriages.

There have been numerous studies on polygamy looking at from different aspects (Abdullah, 2007, 2009; Kamaruddin & Abdullah, 2006; Shah Haneef, 2008). Abdullah (2015), for instance, looked at the legal history of polygamy in Malaysia from pre-colonial to post-independence Malaysia. He highlighted the complexities of polygamy laws throughout the historical periods. Fatah, Raudhotul and Jani (2014) examined the efficiency of the legal provisions on polygamy in Malaysia. The findings showed that the current legal provisions on polygamy in Malaysia are insufficient in curbing the abuse of polygamy. A good suggestion made by the authors is the condition of being able to do “just” should be from every aspect including justice in treatment, children’s education and care, religious educational background and awareness, not just merely relying on financial ability as required in the existing provision. With regards to the positive and negative impacts of polygamous marriage, studies by Fatah (2014), Zain (2010), and Exposito (2017), are good references. Polygamy, according to the researchers, can reduce women’s socio-economic problems in Malaysia. Several researchers have called for Islamic family law reforms particularly relating to polygamous law. Noor (2007), for instance, analysed arguments of prominent scholars, such as Abdurah and Qasim Amin, on the need to restrict polygamy practices to situations where the wife is barren or afflicted with a chronic disease that prevents her from fulfilling her marital obligations. Kamaruddin and Abdullah, (2006, p. 321-322) argued that the abuse of polygamy was largely due to the absence of effective measures taken to curtail the problems. Important reformations relating to legal mechanisms were suggested.

No studies have discussed comprehensively on the legal and administrative aspects in preventing abuse of such marriage. Thus, this research aims to examine important flaws in the governance of polygamous marriage and to propose significant mechanisms in curbing abuse of polygamous marriage. Among the recommendations proposed are to have specific guideline on the financial capability of the husband, and to extend the concept of ta’liq divorce to include polygamy.

**METHODS**

This is a qualitative study on the legal mechanism in preventing abuse in polygamous marriage. A library research method is mainly used to examine the
current legal provision in restricting such marriage. Literatures in the form of books, journal articles, legal provisions, procedures and related court cases are referred to provide insights and information relating to the research area. Islamic Family Law Act of Federal Territories 1984 (hereinafter called IFLA 1984) is selected in this study to present other states in Malaysia. This is because Federal Territories is the capital of Malaysia and directly administered by the federal government. Laws and procedures from selected Muslim countries are also referred to highlight their practices. This research also employs a semi-structured interview on respondents which consists of three judges from the Shariah Court. This interview method aims to examine the current legal and administrative mechanism in minimizing polygamous marriages and to identify the loopholes in the system.

RESULT AND DISCUSSION
The findings of this research are discussed below.

Malaysian Legal Mechanism in Governing Polygamous Marriages
With regards to polygamous marriages, Malaysian laws have neither allowed nor prohibited it. It is left to the Court to decide based on the grounds they think fit. A Muslim man who wants to practise polygamy has to apply for and obtain prior written consent or permission from the Shariah Court judge (Section 23 of the IFLA 1984). The application for permission must be submitted in the prescribed manner and must be accompanied by an iqrar stating the grounds on which the proposed marriage is alleged to be just or necessary, the present income of the applicant, particulars of his commitments and his ascertainable financial obligations and liabilities, the number of his dependants including would be dependants as a result of the proposed marriage, and whether the consent or views of the existing wives on the proposed marriage has been obtained (Section 23 (3) of the IFLA, 1984).

To obtain the consent of the Shariah Court, the applicant of the polygamous marriage must satisfy four conditions. First, he must prove that the proposed marriage is just or necessary having regards to, among others, sterility, physical unfitness for conjugal relations, wilful avoidance of an order for restitution for conjugal right, or insanity on the part of the existing wife or wives. Second, the applicant must prove that he has such means to enable him to support all his wives and dependants, including would-be dependants. Third, the applicant must prove that he would be able to accord equal treatment to all his wives, as required by Hukum Syara’. Fourth, the applicant must prove that the proposed marriage would not cause legal harm to the existing wife or wives (Section 23 (3) of the IFLA, 1984).

There are many court cases that illustrate this point. One such case is Negeri Sembilan’s Ruzaini Hasaan ([2004] I CLJ "iqrar" means an admission made by a person in writing or orally or by gesture, stating that he is under an obligation or liability to another person in respect of some rights, refer to Section 2 of the IFLA, 1984, 5.
The issue that arose in this case was whether the applicant could be said to have the financial means to support two wives. The evidence showed that the applicant only had a balance of RM291.90 left from his monthly income after deducting the expenses for his existing family. The judge dismissed the application and stated that it is a prerequisite that the proposed polygamous marriage should not result in any injustice or victimisation. In this case, it was clear that the applicant did not have the means to support two wives and families, or fulfil the requirements of Section 23 (3) and 23 (4) (a), (b), (c) & (d) of the Enactment that resulted in its rejection. In the case of Mohd Izuddin Mohd Ilias v. Rozeta Hasan ([2008] 4 ShLR 180), the judge stressed that Section 23 (4) was not intended to abolish polygamy, but to provide constructive conditions with the hope that justice could be achieved more effectively among Muslim families. In polygamy, justice is the main concern and it is a religious obligation. Other than fulfilling the conditions of polygamy, the applicant should obtain a written consent from the Shariah Court in which failure will subject to penalty. For example, in Syarie Prosecutor v. Mohd Salleh Idrose Haji Zakaria ([2008] 4 ShLR 180) and Adibah bt Mohd Salleh & Anor v. Shareena bt Azali ([2012] 4 ShLR 60), the applicant was convicted under Section 123 of the Islamic Family Law Enactment of Selangor for contracting polygamous union without prior consent.

Section 23 is to minimise abuse of polygamous marriages as it states that a marriage contracted without the court’s permission shall not be registered under this Act/Enactment (Section 23 of IFLA 1984). However, the provision provides further that, if the court is satisfied that such marriage is valid according to Hukum Syara’, the court could order it to be registered but is subjected to penalties as provided by Section 123.

The provisions on polygamy as discussed above are considered as guidelines to discourage the abuse of polygamy, whereas the procedures are introduced to ensure equality in the treatment of co-wives. However, the state of Terengganu is the only state in Malaysia that has no such condition, the only requirement is obtaining the permission in writing of a Shariah judge (Section 21 of the Terengganu Administration of Islamic Family Law Enactment 1985). In the absence of the detailed provisions on the laws and procedures of polygamy, it is difficult for a judge to make a decision, as there is no proper guideline provided (Kamaruddin & Abdullah, 2006, pp. 321-322).

**Significant Weaknesses Relating to Governance of Polygamous Marriages**

The following are the unresolved issues of the governance for the polygamous marriage that need to be addressed.

**Failure on the part of the Shariah Court judges to adhere to the laws of polygamy.**

It is considered good governance if the court plays their role diligently to ensure justice and fairness are upheld. The court has
significant roles in safeguarding the people’s rights. With regards to the polygamous marriage, the court’s role is important in preventing abuse in a polygamous marriage by determining who may or who may not practise polygamy. The judge should strictly adhere to the conditions of polygamy as stated in the provision. The use of discretionary powers without specific guidelines will run counter to the purpose of marriage.

In the issue of a polygamous marriage, it has been widely criticised that the courts are not protecting the interests of the existing wives and children (Siraj, 1994) as studies showed that the court would still give approval for applications for polygamy although the income of the applicants were not satisfactory and incapable of supporting more than one wife (Abdullah, 2009; Edman & Shakur, 2004; Ismail, 2001). Hence, this proves that even though the capability of supporting the wives is one of the most important criteria of polygamy, the judge still has the discretion in making decision. There are no specific guidelines or measurement to define the financial capability of the applicant.

The study also revealed that the Shariah Court also approved applications for polygamy for certain reasons which are not stated in the Act/Enactment. This means that the court has discretionary powers by taking into account other aspects in approving the application of polygamy. For example, it is reported that the court approved applications for polygamy on the grounds that the applicants had known the prospective wife for a long time, the applicants showed their enthusiasm to practise polygamy, the applicants deeply desired to practise polygamy, the case had been postponed for too long etc. (Abdullah, 2009). In such circumstances, the court felt that a polygamous marriage was necessary and the judges believed that they acted on the basis of the Islamic legal concept to avoid evil which is more important than doing good.

The other reason for the approval of polygamy that should be stressed here is the existing wife’s agreement with the husband’s proposal of such marriage, as it is reported that the wife’s agreement is sometimes considered the sole factor for the court to approve a polygamous marriage (Abdullah, 2009; Edman & Shakur, 2004). In fact, research conducted in Kuching, Sarawak showed that the consent of the first wife is the main factor in approving the application of polygamy, even though it is not the required condition of the polygamy application as stated in Section 21(3) (a), (b), (c) and (d) OUKI, 1991 (Edman & Shakur, 2004). According to Tuan Muhamad Adib Husin, Shah Alam Shariah High Court judge, consent from the first wife could be accepted, but the judge should make sure that the consent is freely given. According to him, asking the wife to give information by writing is one way to know whether her consent is genuine or not. By writing the wife normally will reveal everything and the judge will also know whether the husband is eligible or not to practise polygamy (Tuan Muhamad Adib Husin,
personal communication, 15th of June 2012 at 11.00 am).

Thus, the judge should observe the conditions of polygamy as stated in the provision of the Islamic Family Law Act/Enactment with the aim is to secure justice to wives and children as well as for having a harmonious family life.

**Weaknesses of polygamy laws and inadequacy of penalties.** The Islamic Family Law Act in Malaysia has attempted to control polygamy and prevent its abuse by requiring the permission of the court before a polygamous marriage may be contracted (Section 23 of IFLA 1984). However, studies show that statutory restrictions do not prevent the abuse of polygamy. In fact, more problems arise and the most obvious result is the tendency to cross the border to Thailand and solemnise the marriage there by *wali hakim* (Kamaruddin & Abdullah, 2006, pp. 321-322; Saleema, 2002; Salleh, 1992, p. 130). Studies revealed that among the factors which contribute to the practice of polygamous marriage in neighbouring countries are difficulties to contract polygamous marriage in their own country, the couples have to wait longer for the process, or it is difficult to get approval from the court (Md Hashim, 2009; Muhammad, 2003). In view of this, one may question as to whether the present laws on polygamy should be revised to make it easier to contract polygamy.

It is suggested that research should first be done before amending the laws as the unjust practice of polygamy would not preserve the family wellbeing (Tuan Shaharudin Selamat, personal communication, 2012). This is because research had shown that runaway marriages is preferred because the application of polygamy is rejected by the Court due to either the applicant is unqualified to practise polygamy or could not fulfil the required conditions (Md Hashim, 2009).

Section 12(2) and Section 34 are considered as confusing. This is because even though the law requires the husband to get consent from the court, it still gives recognition to extra-jurisdictional marriages upon payment of a sum as fine (Section 12(2) and 34 of IFLA 1984). Thus, the existence of law that allows the registration of the cross-border polygamous marriages undermines the whole exercise of controlling polygamy, as getting such extra-jurisdictional marriages registered has been made easy by imposing a fine (Shah Haneef, 2008). This runs counter to the purpose of the law that seeks to preserve human wellbeing, physically as well as emotionally, as the polygamous marriage seriously disturbs the wellbeing of these wives who are psychologically ill prepared to share their life partner with another woman (Zain, 2010).

Other problems that have occurred are the existence of separate state jurisdictions within the Federation of Malaysia that enables a man to take advantage of the most convenient law for personal gain (Badlishah, 2004). The case of *Aishah v. Wan Mohd Yusof* ([1990] 3 MLJ, lx) is the best example to illustrate this issue. In this case, the husband was able to circumvent the decision
of the Selangor Shariah Appeal Committee, which had rejected his application to marry another woman, by simply crossing to the state of Terengganu to get married. Thus, the existence of different laws on polygamy should be avoided to prevent abuse of polygamous marriages.

With regards to statutory penalties provided for those who contract polygamous marriages without permission of the court, the present penalties are fines not exceeding one thousand ringgit or imprisonment not exceeding six months or both (Section 123, IFLA 1984). It is argued that such penalties are insufficient to serve as an effective deterrent for men who contravene the law (Abdullah, 2009; Md Hashim, 2009). Based on the interviews conducted in this research, all respondents agreed that the penalty should be increased.

**Limited application of ta’liq agreement.**

This research finds that in practice, the application of the ta’liq agreement is subject to the prescribed provisions provided by the State Islamic Religious Department (JAIN). However, it is worth noting that the ta’liq provision as stated in Section 22 of the Islamic Family Law Act/Enactment does not limit to any specific matters as it provides that:

> "Immediately after the solemnization of a marriage, the Registrar shall enter the prescribed particulars and the prescribed or other ta’liq of the marriage in the Marriage Register"

The words “prescribed or other ta’liq” refers not only to the specific terms of ta’liq as practised, but any stipulation which is agreed by the spouse could also be included. In this regard, additional terms of polygamy can be included to provide for the right of the wife to obtain a ta’liq divorce if the husband takes another wife. This ruling has been adopted and followed by other Muslim countries such as Jordan and Morocco (Abdullah, 2008).

**The absence of measurement or guideline on financial capability of applicant.**

Defining financial capability is very important in measuring the competency of the applicant of the polygamous marriage. Unfortunately, there is no measurement or guideline in defining the financial capability of the applicant. The normal practice is that it is up to the Shari'ah Court judge to determine the financial competency of the applicant. The judge has absolute freedom as it is based on his personal view. Several researches proved that the court still gives approval for the application of polygamy, although the applicants are not financially capable of supporting more than one wife. Abdullah (2009) for example, found that the court had given approval to 10% of the applicants of whose income was less than RM1000.

Edman and Shakur (2004) also revealed that the court had given approval for the application of polygamy to applicants whose income was between RM501 to RM1000 (10.5%) and between RM1001 to RM2000 (44%), i.e. the highest percentage from the...
overall research. In one case, the court gave its approval to the applicant even though his income was only RM500 and the wife was not working (Tuan Anwan Ab. Mutalib, personal communication, 3rd of May 2012 at 3.00 p.m.). The court had approved the application of polygamy as the applicant showed eagerness to practise it.

Abdullah’s (2009) research at the Shariah Courts in West Gombak, Sepang, Ipoh, Kuala Kangsar, Kuala Muda, Kuala Terengganu, Marang and Kota Bharu found that about 40% to 60% of the applicants of polygamous marriage earn an average gross monthly income between RM1001 to RM2999. Interestingly, 20% of the applicants in Kuala Muda, Marang and Kuala Terengganu earn less than RM1000 (Abdullah, 2009). This shows that even though the applicants are financially incapable of practising polygamy, they are still granted approval. Thus, a standard measurement in defining the financial capability of the husband is needed.

Recommendations

In Malaysia, even though specific provisions governing polygamy have been formulated, it remains controversial and cases of abuse of polygamy continue to rise. This necessitates State intervention for regulating polygamy not only from the legal perspectives but also through non-legislative measures. The following are suggested in order minimise abuses in polygamous marriages.

Provide specific guidelines in defining financial capability. In the Malaysian practice, the judges have discretionary powers in determining the financial capability of the applicant and studies show that even though the capability of supporting the wives is one of the most important criteria of polygamy, some judges do not consider it as an important element. The use of these discretionary power without specific guidelines will run counter to the purpose of marriage itself, namely to preserve the welfare of the human being.

Therefore, this research proposes that relevant authorities such as JAKIM, JKSM or JAIN to provide specific guidelines or measurements in defining financial capability of the applicant for polygamous marriage. The purpose is to guide the judges in determining financial capability of the applicant. It will also become a guide for anybody interested in practising polygamy to ensure that they are financially fit to support the existing and new families. The basic element that should be taken into consideration in defining financial capability is the cost of living. It is suggested that components in determining cost of living are based on dharuriyyah (human needs) which include among others, shelter, food, clothing, health, education and transportation. It means that the husband should have the financial capability to support the basic needs of all his dependents. Different states could have different methods of calculation as it is based on the cost of living. The amount of maintenance of the wife/wives and children will be estimated and the surplus will indicate whether the applicant is eligible or not for a polygamous marriage.
Views of wife/wives and other related persons. It is submitted that the provision in Section 23 (5) of IFLA, i.e., the requirements to summon existing wife/wives, the woman to be wedded, the wali of the woman to be wedded and any other related persons to be present at the hearing of the application are very important in order to know the capability of the applicant to practise polygamy. Such persons will provide relevant information relating to the proposed marriage which will help the judges in making an informed decision. Unfortunately, this provision for the State of Selangor is being reviewed to give discretion to the judges whether to summon or not those related persons to be present at the hearing of the application.

Therefore, this research suggests that Section 23 (5) of IFLA should be maintained as it is important to ensure justice in polygamous marriages. Views of the existing wife/wives are very important as she/they is/are the closest person(s) to the husband. To have genuine information, it is suggested that the judge should ask the wife/wives to give information in writing, as she/they will freely give the information without fear.

It is also proposed that the existing wife/wives’ consent should not be considered as the sole factor for the court to approve the application for polygamous marriage. In addition to the consent of the wife, the financial capability of the applicant should be equally emphasised.

Revise related laws. The provision of Section 12(2) and Section 34 should be revised as it allows registration of cross-border polygamous marriages. They undermine the entire exercise of regulating polygamy, as registering such extra-jurisdictional marriages has been made easy, i.e. through a simple fine. This runs counter to the purpose of the law and its ultimate goal of preserving human well-being. The penalties provided are insufficient to serve as an effective deterrent for persons who contravene the law.

The law on polygamy in Malaysia should also be standardised. The existence of separate State jurisdictions within the Federation of Malaysia enables persons to take advantage of the most convenient law for personal gain. At present, the laws in the State of Terengganu requires the applicant to obtain permission from the Shariah Court only for polygamous marriage. There are no other conditions prescribed and the judges have absolute discretionary powers whether to allow it or not. The State of Perlis on the other hand, has a different requirement. It requires the Court to summon the applicant to be present at the hearing of the application, whereas other States require the Court to summon not only the applicant but also the existing wife/wives, the woman to be wedded, the wali of the woman to be wedded and any other persons who in the opinion of the Court may provide information relating to the proposed marriage.

Laws of other Muslim countries can also be used as a guide. The Algerian Code (article 8), for instances, strictly provides that if the husband has not obtained the
judge’s authorisation, the new marriage is dissolved before consummation. Syrian Codes of Personal Status 1953 also provides that a marriage contracted out of court is not to be certified without such procedures with the exemption of cases where the wife is pregnant or a child has been born. A harsher rule is applied in Bangladesh, in which it provides that any person who wants to marry during the subsistence of an existing marriage to contract another marriage, he shall have to first obtain permission from his existing wife and second permission from the arbitration council, without which the subsequent marriage will be illegal and liable to punishment (Section 6 of the Bangladesh Family Court Ordinance 1985). Unfortunately, those provisions which are good to deter the husband are not found in any other Family Codes of other countries. Indonesia is another example of a country that set out strict limitations on the practice of polygamy. Section 56 of the Kompilasi Hukum Islam (Indonesian Compilation of Islamic Law 1991) provides that the husband shall obtain the permission from Shariah Court (Pengadilan Agama) first before contracting a polygamous marriage. The Shariah Court would not grant permission unless the reason for polygamous marriage is in line with section 57, i.e. first, failure on the part of the wife in performing her duties as a wife, second, the wife is suffering from physical disability or an incurable disease, and third, sterility on the part of the wife. Interestingly, Section 59 provides that the permission from the court is subject to the consent of the first wife and the court is satisfied that the husband has such means to support all his wives and dependents. However, if the present wife does not give her consent and the husband has sufficient ground as stated in Section 57, the judge will use his discretion to approve the husband’s application for a polygamous marriage (Section 56-59 of the Indonesian Compilation of Islamic Law; Adriaan & Stijn, 2010; Nurmila, 2008).

**Stipulation of no polygamy in marriage contract.** Another way to strengthen rules governing polygamous marriage and to protect the right of a woman is by providing stipulation of no polygamy in the marriage contract. This requirement allows the wife to stipulate in the marriage contract that the husband shall not take another wife and which entitles her to sue for divorce if there is a breach of contract by the husband. Interestingly, this stipulation of no polygamy has been practised in most Arab countries. However, this practice is not common to Muslims in Southeast Asian countries including Malaysia.

In Malaysia, even though ta’liq agreement is practised, it is only subject to the prescribed agreement provided which does not include polygamy. However, it is worth noting that the ta’liq provision stated in IFLA 1984 (Section 22) and other State Family Enactments refers not only to the specific agreements as has been practised, but any matters which are agreed by the spouse. Thus, it is suggested that this ta’liq agreement should be broadened to include additional terms on polygamy. The purpose
is to provide the right for the wife to obtain a *ta'liq* divorce if the husband takes on another wife.

**Provide counselling sessions and courses.** State Islamic Religious Department (JAIN) should provide counselling sessions or pre-marriage course to any men who wish to practise polygamy so that they will understand the concept of polygamous marriage. During the counselling session, emphasis should be given to the issue of duty and responsibility of the husband and also the issue of justice, as those issues are often neglected by the husbands. The husband should also be advised on his important responsibility to support all his dependents, and his capability to practise polygamy. This is because research has shown that most of the applicants of the polygamous marriages are financially incompetent.

JAIN and JAKIM should increase advocacy programmes on polygamous marriage for the purpose of educating the public on the true reason for such marriages and family life. Knowledge and information on polygamous marriages should be disseminated nationwide by using all available mediums, both printed and non-printed. However, emphasis should be given to responsibilities and justice, as they are the most important elements in having a polygamous marriage.

**CONCLUSION**

Islam permits polygamy to protect women’s interests and to avoid moral as well as social problems. Unfortunately, a number of polygamous marriages among Muslims in Malaysia are problematic and abusive as they do not reflect the true reason behind its recommendation in Islam. As a consequence, polygamy is controversial and this had invited criticism on the credibility of the laws on polygamy. This study has pointed to several weaknesses in the governance of polygamous marriage, both legally and administratively. It provides recommendations to improve the current mechanism in order to avoid abuse.

**REFERENCES**


Noor, Z. (2007). Gender justice and Islamic family reforms in Malaysia Kajian Malaysia, XXV (2), 121-156.


Merging the Research on Halal Concept Using Humanoids for Patient with Brain-Impairment: Its Maqasid and Principles

Siti Fatahiyah, M.1* and Hanapiah, F. A.2

1Academy of Contemporary Islamic Studies (ACIS), Universiti Teknologi MARA (UiTM), 40450 Shah Alam, Selangor Malaysia
2Faculty of Medicine, Universiti Teknologi MARA (UiTM), 47000 Sungai Buloh, Selangor, Malaysia

ABSTRACT

There is a marked increase in survival rates of traumatic brain injury (TBI) survivors in Malaysia as a result of improved acute health care management. Humanoid robots have been proposed as a therapy option to improving TBI management. Hence, the purpose of this paper is to provide insights on the use of humanoids for augmenting therapy in a brain-impaired individual, particularly the permissibility (halal) of using Maqasid principles as a therapy option for TBI. Spirituality and religious interventions will be the main focus of the paper. Data was collected using in-depth interviews with the rehabilitation physicians and therapists as well as via library search, and literature review. Since using humanoid is a new area in rehabilitation, literature on this is scarce, particularly those that are Islamic-based or Islamic oriented. The study also examines the provision of new theories of embodied spirituality relative to humanoids and their perspectives including their impacts on society, ethics, and theological implications of their basic assumptions.

Keywords: Brain-impaired, humanoid robots, Islamic perspective, rehabilitation, spiritual

INTRODUCTION

Traumatic brain injury survivors (TBI) due to road traffic accidents has increased (MIROS Road Facts, 2012) due to improved acute health care management (Jamaluddin, Abd Wahab, Wahab, Ming, & Mohd Saiboon, 2011). The rising number of TBI adds burden to not only the survivors but also to their family, community and country as a whole. The rehabilitation of TBI survivors is not new. The approach takes
on a multidisciplinary team effort, with a continuum of acute care from hospital to the community. No one approach is more superior to the other; hence the services will be dependent on the skills of the attending team and the availability of resources. Many questions regarding the management of TBI are still left unanswered. Gordon et al. (2006) reviewed recent trends in the management of TBI from critical care to community integration, exploring early management, complications of TBI, and outcome of therapeutic models and delivery systems. Many aspects still require preliminary studies and intervention studies for current practices are very much needed (Gordon et al., 2006).

“Halal” is an Arabic word which means “lawful,” or “permissible” under Islamic law. The opposite of halal is “Haram” which means “unlawful”, “prohibited”, and “forbidden”. Halal and haram are universal terms that apply to all facets of life (Sadeeqa, Sarrif, Masood, Saleem, & Atif, 2013). The concept of halal is wider and more comprehensive. Contrary to the popular belief that the word halal is only used in the context of consumables or food products, today it has a wide range of application in the context of inter-relationships, clothing and manner, social and business transaction, trade and financial services to investments or others which are parallel to the guidance specified by Islam (Nasaruddin, Mel, Fuad, Jaswir, & Abd. Hamid, 2012).

The halal guidelines compiled by the Malaysia’s Department of Islamic Development (JAKIM), the country’s central Islamic authority, are based on Qur’anic interpretations by the Maliki, Hambali, Syafie, and Hanafi sects. In the hadith, the Prophet Muhammad said: “Halal (lawful) is clear and haram (prohibited) is clear; in between these two are certain things which are suspect or shubha. Many people may not know whether those items are halal or haram (but) whosoever leaves them, is innocent towards his religion and his conscience”. According to Shafie and Othman (2006), anyone who consumes or involves in any of these suspected items may fall into the area of unlawful and prohibited. This research focuses on the halal concept of health therapy and rehabilitation using humanoids for patients with brain impairments.

The use of technology and assistive devices in rehabilitation has provided exciting new directions in terms of the options and approaches in TBI rehabilitation. Many of the technology look into intelligent devices and environmental modification, assisting those with disabilities. The use of pervasive assistive technology has also created a new scope in monitoring progress, away from the artificial environment of a clinical setting. The true performance of the individual can be assessed by means of functional and purposeful activities, related to ones’ usual activities of daily living, in the environment that he or she lives in (Raskovic, Martin, & Jovanov, 2004). Technology has also expanded beyond monitoring and compensating for the impairment. Its use in therapeutic activities to restore a loss function or maximise the
Merging the Research on Halal Concept Using Humanoids

recovery of function has led to an area of great research interest. One of these areas of interest is in Rehabilitation Robotics. Rehabilitation Robot System proposed by Yakub, Md. Khudzari and Mori (2014) is divided into two main categories: (1) Therapy Robots; and (2) Assistive Robots. Therapy Robots can be subdivided into Physical Therapy and Emotional Therapy. Physical Therapy robots are typically exoskeletal orthotic devices that deal with the upper, lower or full extremities. The authors further describe the assistive robots as either Social Interaction Robots or Physical Interaction Robots.

Zafonte (2006) had earlier described social robots as a potential area in Biotechnology research for TBI rehabilitation. According to him, the assistive technology, such as the “helper robot”, may act as a social interaction and physical interaction robot. Helper robots or social robots may take on the form of a machine-like device, such as the auto vacuum or human-like robots, i.e., humanoids. In terms of therapy, humanoid robots are less well studied as compared to its counterpart, the exoskeletal devices. Although Yakub, Md. Khudzari and Mori (2014) described this category of Rehabilitation Robot System under “Emotional Therapy”, we would like to address it in a wider perspective as “Cognitive Therapy” Rehabilitation Robot System. The cognitive rehabilitation aimed at the learning or relearning of new or lost skills after TBI is imperative in the success of a rehabilitation programme. Humanoids in this sense benefit cognitive-impaired individuals, especially those with development disabilities as a result of brain injury (Malik, Yussof, Hanapiah, Rahman, & Basri, 2015). The field of Epigenetic Robotics or Developmental Robotics has contributed, in synergy, to the studies of understanding the model of both typical and atypical developing children (Prince & Gogate, 2007). This has also proven to be true for understanding and developing better robots. The use of humanoids in TBI may help us further understand this complex injury and at the same time encourage further development of autonomous machines, modelling Epigenetic Robotics for use in cognitive therapy.

METHODS
This is a qualitative study and empirical data was collected using in-depth interviews with rehabilitation therapists, library search and literature review of earlier studies on this topic. In addition, interactions between the children with brain-impairment and the humanoid robots were observed. The observations were carried out in collaboration with UiTM Specialist Medical Centre, Discipline of Rehabilitation Medicine, Faculty of Medicine, UiTM Sungai Buloh and Faculty of Mechanical Engineering, UiTM, Shah Alam. An approval was obtained from UiTM Medical Ethics Committee.

RESULTS AND DISCUSSION
Many TBI patients have attention deficit (Anderson et al., 2012). The attractiveness of humanoid is in its potential to create the
attention needed during therapy. Although few studies have looked into the effect of attention improvement in TBI after exposure to mobile robots, the most benefits were seen among autistic children (Duquette, Mercier, & Michaud, 2006). Humanoids, such as NAO, are now available in the market and are used for both typical and atypical developing children. Studies on the initial response of children with autism are promising. Hashim et al. (2013) and Shamsuddin et al. (2012) looked at the potential behavioural and cognitive changes associated with a single exposure to the humanoid robot NAO.

The set scenario of a humanoid robot during therapy can be programmed based on the capacity of the TBI individual. As the individual recovers, the complexity of the scenarios can be advanced to higher levels of cognition to incorporate complex executive functions. The present study hypothesises that use of humanoid robots will augment and assist the recovery of TBI patients. These improvements will be translated to cognitive improvement, and the patients will eventually be weaned off clinical therapy and moved to community-based rehabilitation and reintegration. Malik, Hanapiah, Abdul Rahman and Yussof (2016) looked at recent trends in use of Social Assistive Robots for therapy by examining 12 studies that looked at the potential use of social robots as an augment to conventional therapy for children with cerebral palsy. They concluded that social robots, as social assistive robots, have potential. However, most of the studies they reviewed were small, conceptual and lacked clinical outcome assessment.

Engagement is closely related to attention and purposeful activities, and the answer may be the humanoid robot. Studies have shown that engagement and purposeful activities during therapy are important components of the rehabilitation programme. The creation of a predictable and simple environment, in which a humanoid robot can provide, will help with engagement. Many TBI individuals are overwhelmed with the complexity of the environment, unable to process all the information around them. When complexity is overwhelming, individuals with TBI may become restless and agitated. This might cause them to withdraw from therapy sessions. This is often a stumbling block in the progress of the programme and recovery.

The question posed by many regarding the use of humanoid robots in the brain-impaired is not only its effectiveness but also its permissibility in Islam as an inanimate object of human resemblance. According to Ayad (2013, pp. 25-31) the holistic approach in health is not only to ensure the absence of illness, but also the balance between physical health, biochemical health (nutrition and environment), intellectual health (conscious and subconscious mind), emotional health and spiritual health (food for the soul). This paper will further discuss the aspect of spirituality and religiosity in the use of humanoid robots in the augmentation of therapy.
Maqasid Shariah and Islamic Principles on Humanoid Therapy

Maqasid Shariah refers to the objective of shariah to ensure welfare to mankind. There are five basic intents of shariah, namely preservation of religion, life, progeny, intellect and wealth. Health care in general, or in this particular study treating patients with brain impairment with the assistance of humanoids, seems to be intricately associated with the preservation of both progeny and intellect. Hence, to treat a patient through medication and therapy is a subject matter inseparable from shariah and its maqasid. In the Qur’an, Allah said: “He has only forbidden you what dies of itself, and blood, and flesh of swine, and that over which any other (name) than (that of) Allah has been invoked; but whosoever is driven to necessity, not desiring, nor exceeding the limit, no sin shall be upon him; surely Allah is Forgiving, Merciful”. (Al-Baqarah: 173)

In order to preserve the five basic intents, it should be done by following the Islamic Principles. Muslims should find ways to heal their sickness, then only they should leave to God to grant them with cure (Al-Jauziyah, 2010, pp. 30-34). The statement “the ends justify the means” is not practised in Islam. From an Islamic perspective, the decisions on the actions to be taken to achieve a particular objective must always be based on the Islamic Principles. Siti Fatahiyah and Rukiah (2010, pp. 9-11) found that in aspects related to medicine, there are six major principles to be followed. These six major principles are:

1. The treatment goes in line with the teachings of Islam.
2. The treatment is based on the Islamic Legal Maxims.
3. The treatment focuses on the prevention and cure (al-wiqayah).
4. Avoid doing destructions (sad al-zarai’).
5. Believe in the power of Allah to cure every illness.
6. Use an unlimited method of treatment which is shariah-compliant.

Islamic Legal Maxims Application

Shariah can be observed and practised by Muslims wherever they go. If there are unavoidable constraints, however, it is permissible for Muslims to not observe shariah (Muda & Ali, 2000, p. 139). Islamic Legal Maxims are the guided rules and regulations to be fulfilled in order to measure the significance of implementing certain actions. The maxims consist of the following:

1. Matters shall be judged by their objectives (al-Umur Bi Maqasidiha).
2. Certainty shall not be removed by doubt (al-Yaqin La Yuzal Bi Al-Syak).
3. Hardship shall bring alleviation (al-Masyaqqah tajlibu Al-Taisir).
4. Harm shall be removed (al-Darar Yuzal).
5. Cultural usage shall have the weight of law (al-‘Adah muhakkamah).
Generally, the making of robot falls under the ruling of image making. If the robot resembles exactly the shape of a man or any animate being with the purpose to be worshipped or adored without any urgency, it is prohibited in Islam. It is associated with the action of imitating Allah’s creation.

“Give life to that which you have created.” It also comes with the words of the Prophet (peace and blessings of Allah be upon him): “Those who will be most severely punished on the Day of Resurrection will be the image-makers.” (Narrated by al-Bukhaari, no. 5606; Muslim, 2109). In addition, the establishment of guidelines along with supporting argument in the presence of acceptable excuse: (what is allowed and not allowed) due to the acceptable excuse with the presence of the reasons in order to making it or leaving it. Maqasid Shariah consists of: (i) urgency (ad-dharuriyyat): guaranteeing their ‘vital needs; (ii) necessity (al-hajiyat): catering for their ‘requirements; and (iii) additional facilities (at-tahsiniyyat): allowing for ‘betterment’, enhancement or improvements (tahsiniyaat) in the quality of their life. Thus, the use of humanoids falls under the level of urgency because the brain-impaired individual has to undergo intervention and rehabilitation. This fulfils the requirement of Maqasid Shariah’s five basic intents.

There are some controversial questions among religious scholars and academicians/clinicians on the use of humanoid robots for therapy and intervention in the brain-injured, and on whether there are options for better modes of intervention. At this point, the weight of finding solutions and reducing the burden of brain injury is greater. Graves, Rivara and Vavilala (2015) estimated that the average cost of paediatric severe traumatic brain injury at one-year post injury to be averaged at USD38,586.00 per child. Lifetime costs obviously are greater when we look at the aspects of not only the hospital care, but also the costs of social care (education and housing), and the long-term costs of productivity (loss of carers needing to leave the workforce, or the injured not being able to enter the job market). A multidisciplinary and multimodal approach needs to be applied for better care of the brain-injured. This study has proven humanoid robots are able to provide a good outcome.

CONCLUSION AND SUGGESTIONS

It is clear that the humanoid robots are not made to replace humans or healthcare professionals in providing therapy and care. The humanoids are merely an augmentation of therapy, providing a new approach in increasing awareness, attention, and participation of the brain-impaired. The features of the humanoid are inclined towards simplicity and are necessary to help process information during learning and rehabilitation. Without this aid, the brain-impaired may face further and unnecessary hardships. The objective is clear during the intervention (to seek cure) and Al-Su’aidan (2007, p. 338) elaborates that the method should cause no harm or destruction. However, many of the studies looking at the effects of intervention with
humanoids are small, conceptual and poorly measured. When these factors are weighed in from the perspective of Islamic principles and legal maxims, justified uses of the humanoid may be questioned. Nevertheless, in looking at the potential use, the evidence is there. Researchers need to embark on larger and better-designed studies with irrefutable clinical outcome measures and results. The function of the humanoids is now still far from automaticity. At this time, it still requires the operator or the human programmer and therapist to run the session. No known existing robot can emulate the complex human brain and function to become fully automatic (artificial intelligence). As to date, the robots used in therapy are still manually operated. Hence, the idea of a fully automated and an artificially intelligent humanoid should not be the researchers’ main concern. The non-animacy is best maintained, including the features of the humanoid to resemble but not to fully replicate that of the human being. Studies have also shown that the full replication of human features appears to be non-beneficial for therapy and intervention, to the extent that it can, in fact, cause harm by instilling fear. Further studies should be conducted to create spiritual modules or scenario designed to programme the humanoid robots to comply with the legal maxim of “certainty shall not be removed by doubt”, as applied to this new area of research and intervention.

ACKNOWLEDGEMENTS
The authors acknowledge with gratitude University Teknologi Mara, Malaysia and the Niche Research Grant Scheme of Epigenetics Humanoid Intervention Incorporating Religious Attribute for Brain Impairment (600-RMI/NRGS 5/3 (11/2013). Utmost thanks go to the members of the team for their excellent support to internalise the objectives of this study and to all members of Islamic Councils including the muftis who gave valuable comments and ideas on this research.

REFERENCES


Judicial Approaches in Custodial Cases Relating to Mumayyiz Children

Hashim, N. H.*, Ngatiman, S., Sahari, N. H. and Alias, B.

Academy of Contemporary Islamic Studies (ACIS), Universiti Teknologi MARA (UiTM) Campus Selangor, 40450 Shah Alam, Selangor, Malaysia

ABSTRACT

Children’s position after divorce often becomes an issue, as to who will be responsible for their welfare. Some divorced couples manage to mutually settle custody issues outside the court. However, many the custodial dispute to the court. It is provided in the Islamic Family Law Enactment (State of Selangor) 2003 that the mother shall be entitled to the custody of her under-aged children. When the child has reached the age of discernment (mumaiyiz), he or she shall have the choice of living with either of the parents, unless the court orders otherwise. However, the law does not provide any guidelines on how the mumayyiz children shall be called and to what extent their opinion is to be heard. This study examines the approach taken by the Syariah court in handling custodial cases relating to mumaiyiz children. It adopts doctrinal legal research method as provided in unreported cases. Findings show the judges do not have a standard approach in handling custodial cases of mumaiyiz children. Therefore, the study recommends proper guidelines are provided in assisting Syariah court judges to arrive at a mutually acceptable solution.

Keywords: Children’s choice, hadhanah, Malaysia, mumayyiz, Syariah Court, welfare of children

INTRODUCTION

Child custody or hadhanah literally means taking care of someone. The word hadhanah is derived from the word al-hidn which means to embrace or hug where adults hug or place a child in their lap (Sabiq, 1987). Al-Zuhayli (2001) defines hadhanah as taking care of those who have not reached the age of discernment and cannot live independently. It also means raising them...
in accordance with their best interests and protecting them from anything that may harm them. This includes providing them with sustenance and education to ensure they become a good human being and are able to care for themselves.

Some Muslim scholars propose that hadhanah has a certain limit whereby it is considered complete when the child reaches the age of mumaiyiz (the age of discernment). The age of mumaiyiz is important to distinguish between small children who have no capacity to make a decision and those who are deemed to be able to give an opinion in matters concerning them. The Mumayyiz children are believed to have the capacity to manage and defend themselves without the help of others. As such, they are considered qualified to make a choice to live with either of their parents or any other party post-divorce.

Muslim scholars often support this understanding by referring to the hadith (traditions, records of the words and deeds of the Prophet Muhammad) where it was reported a mother came to the Prophet and lodged a complaint about the custody of her child (Albani, 1998, p. 47). She claimed that her husband wanted to take away her son from her. She said, “My husband wishes to take away my son, O Apostle of Allah, and he draws water for me from the well of Abi Inabah, and he has been good to me.” The Prophet then said, “Cast lots for him.” Feeling dissatisfied with the complaint lodged by the wife, the husband said, “Who is disputing with me about my son?” The Prophet then said to the child, “This is your father and this is your mother, so take whichever of them you wish by the hand.” The son took his mother’s hand and she went away with him.

The opinion of Muslim scholars who are of the view that the mumayyiz child deserves to be given the right to express his/her opinion and to be with either parent after the divorce is also in line with the provisions of the United Nations Convention on the Rights of the Child (UN Convention on the Rights of the Child [UNCRC] 1989. Article 12 provides that all persons shall take care and respect the rights of children to express their views in any matters concerning them, including the issue of guardianship (http://www.unicef.org.uk/UNICEFs-Work/UN-Convention/).

Legal Provisions Concerning Hadhanah and Mumayyiz Children

In Malaysian Syariah law, the mother is given priority in custodial cases of small children. Section 82 of the EUUKIS states: the mother shall be of all persons the best entitled to the custody of her infant children during the connubial relationship as well as after its dissolution. However, the right of the person to the custody of a child terminates upon the child attaining the age of seven years, in the case of a male, and the age of nine years, in the case of a female.

Upon fulfilment of that period, section 85 (2) provides:

(1) The right of the hadinah to the custody of a child terminates upon the child attaining the age of seven years, in the case of a male, and
the age of nine years, in the case of a female, but the Court may, upon application of the hadinah, allow her to retain the custody of the child until attainment of the age of nine years, in the case of a male, and the age of eleven years, in the case of a female.

(2) After termination of the right of the hadinah, the custody devolves upon the father, and if the child has reached the age of discernment (mumaiyiz), he or she shall have the choice of living with either of the parents, unless the Court otherwise orders.

Section 87 of the EUUKIS further provides that the court has the power to place the child, in specific circumstances, in the custody of any other person or of any association if it is in the best interest of the child. In determining such cases, the court shall have regard to the wishes of the parents of the child; and the wishes of the child, where he or she is of an age to express an independent opinion. The law thus makes a clear provision that the court has the power to determine this matter and the mumayyiz children are given clear right to express their views and make a choice to live with any of their parents or any other party of their choice.

Even though mumayiz children are entitled to give their opinion, the law, however, does not provide any provisions on how the practice should be implemented. There are no guidelines for judges in dealing with this matter, particularly on how and what to ask the child in order to elicit a response regarding the child’s preference. Moreover, there is no provision showing to what extent the opinion of the children will be considered by the court (Che Soh, 2014).

METHODS
This study adopts doctrinal legal research approach which refers to a research methodology centred on the study of legal principles and values derived from primary sources of law i.e. legal provisions and cases decided by the courts applicable in society (Mike & Wing, 2007, p. 20). This study was conducted by examining the provisions under the EUUKIS concerning the custody of small children and those who have reached mumaiyiz, and reviewing the judgement made by the Syariah court with regards to the hadhanah of mumayyiz children after divorce. The analysis was based on an examination of 20 unreported cases decided by the Selangor Syariah courts between 2008 and 2012. In this study, all cases are cited with anonymised names, the registered case number and the year the decision was made.

FINDINGS AND DISCUSSION
Although the law has given the right to the mumayyiz children to express their views and making their choice to live with any of the parents or other parties after divorce, the cases reviewed in this study showed inconsistencies in the approach taken by the court: first, the mumayyiz children were not called to the court; second, mumayyiz
children were called to the court to consider their opinions; and third, the opinion of mumaiyiz children were not considered despite the fact that they were interviewed by the judge.

**Mumayyz Children Were Not Called to the Court**

In most of the *ex parte* cases, judges did not instruct for mumayyz children to give their opinion before determining the custodial issues. An *ex parte* case refers to a case where only the plaintiff appears before the open trial, without the appearance of the defendant. From a procedural perspective, when the plaintiff makes any application for open trial, a summon and statement of claim will be served on the defendant. When the summon is duly served, the defendant should appear and present their case. Section 121 of Syariah Court Civil Procedure (State of Selangor) Enactment 2003 provides that;

(1) If, when any action is called on for hearing -

(a) neither party appears, the Court may dismiss the action;

(b) the defendant does not appear, the Court may, subject to proof of due service, hear and determine the action in his absence; or

(c) the plaintiff does not appear, the Court may dismiss the action and hear and determine any counterclaim.

It shows that when the defendant fails to appear, the court has the power to instruct for the case to be heard which is known as *ex parte* hearing. However, section 121(2) states that before making any judgment on the plaintiff’s claim under paragraph (1) (b), the court shall order the plaintiff or the defendant, as the case may be, to take an oath of *istizhar* (a specific oath taken by the plaintiff upon instruction given by the court, with the intention to reject any negative claim against the plaintiff after he or she produces the evidence).

Cases reviewed showed that in the *ex-parte* custodial cases concerning mumayyz children, judges instructed for the trial to be resumed after the plaintiff took the oath of *istizhar*. Judges also, in most cases, made the decisions about the custody of the children involved without calling them to the court. It seems that the mumayyz children were not given any voice during the trial of *ex parte* application.

This approach can be seen, for example, in the case *Z v. T.Z* (10300-028-0015-2012) where the Plaintiff (mother) applied for the custodial right over their six children, aged 18, 16, 13, 11, 7 and the youngest aged 5. The summon had been served on the father as the Defendant, but he failed to attend the hearing. The court had resumed the hearing, and instructed the Plaintiff to present her case. After the Plaintiff took the oath of *istizhar*, the judge made the decision that the children should be placed under the supervision of the Plaintiff and was given full custodial right. In this case, the judge did not ask the children, including the children
Judicial Approaches in Custodial Cases

who had reached the stage of *mumayyiz*, to give their opinion on the issue.

A similar approach was applied in cases where both parties appeared in court. In the case of *M W v. W S* (10400-028-0587-2012), the father (Plaintiff) claimed for the custody of their two children, a son and a daughter aged 11 and 9 respectively. The judge in this case ordered for the proceeding to be continued and instructed both disputing parties to produce relevant documents. Throughout the proceeding, the court did not elicit the views of the children. After several sittings, the judge decided that the two children would live with the Plaintiff, without eliciting views of the *mumaiyiz* children.

*Mumaiyiz* Children were Asked to Give Opinions and the Judge Considered their Choice

Cases reviewed also showed that some judges instructed *mumayyiz* children to be called to the court and their opinions were taken into consideration by the court in total. This approach was seen in the case of *S v. K* (10400-028-0408-2012), which dealt with the custodial issue of two *mumayyiz* children, a boy and a girl aged 13 and 11 respectively. After several sittings, the judge asked for the two children to be called to express their opinions about the custodial dispute, and with whom they preferred to stay with. The daughter opined she was more comfortable living with her father, but would like to meet the mother every weekend. The son, on the other hand, said that he preferred to stay with his mother and would like to meet his father and his sister several times a month.

In this case, the judge expressed his concern about the right of the children to stay comfortably with whom they prefer, and their right to meet with the non-custodial parent, their sibling and their close family members. The court also emphasised on the quality time spent together and advised the parties to have a respectful relationship for the sake of their children. The court also instructed the parties to ensure that the visiting time is observed and the children would not be prevented from meeting with the non-custodial parent. This case shows the court considered the choices of the *mumayyiz* children as important and had taken them into consideration in his decision.

In another case, *R v H* (10400-028-0466-2011), the Plaintiff (father) applied for custody of his eight-year-old daughter. Interestingly, although the child had not reached the *mumayyiz* stage as provided under section 85(1) of the EUUKIS, the court allowed for the daughter to be interviewed. In the session, the court asked the child whether she was aware her parents would not stay together anymore after the divorce and with whom she preferred to live after that. The judge also asked the child the reasons behind her choice. The child indicated she preferred to stay with her father and her choice was respected both by the court and her parents. It shows that the judge had used his discretion to ask the opinion of the child whom he thought was capable enough to give her view, though
she was below the age specified in the law, which is nine years for a girl.

Mumayyiz Children were Asked for their Opinions but the Court Considered their Choices Partially

Findings also showed that in some cases, the court requested mumayyiz children to express their views but they were not considered fully. In the case of A v. O (10400-028-0033-2010), the Plaintiff (mother) claimed custody of her two sons aged 11 and 10. The judge instructed for the children to be brought to the court to express their views. The eldest son said that he felt more comfortable living with their father while younger one said he preferred to live with the mother. The two children also voiced their concern regarding school holidays and the availability to meet together as one big family. They would like to spend every weekend with the parent they did not stay with. They also wanted to be together once in a while and would prefer to spend school holidays with the custodial parent.

The judge listened tentatively and appreciated their views and approved some of their choices. The first son would live with the father as the custodial parent while the second would stay with his mother as his custodial parent on weekdays. However, the judge said that he could not agree with the idea of spending the weekends with the non-custodial parent and the whole school holiday with the custodial parent. The judge, instead made a different decision in which the children should spend every weekend alternately between the two parents and shared equally school holidays.

CONCLUSION AND RECOMMENDATION

This study has pointed out the different approaches taken by the judges in handling custodial cases relating to mumayyiz children. Some judges had listened to the children’s wishes, while some did not elicit the opinions of the children. The mumayyiz children whose views were heard by the judges felt they were appreciated. This action honoured the children’s right to speak and showed that they deserved respect. Meanwhile, there were judges who did not elicit the views of the mumayyiz children, which implied that in their view, the children’s right to speak is not necessarily important.

The non-uniform approaches have a significant impact on the children’s right to speak and to be heard which is protected by the law. The different approach can also undermine the right of mumayyiz children to speak, give their opinion and state their desire in matters involving them. Hence, this study recommends guidelines to be introduced, so that a uniform method can be followed as a guide for judges in making decisions. It is not only to safeguard the right of the mumayyiz children to express their views, but may also assist judges in handling hadhanah cases regarding mumayyiz children.
ACKNOWLEDGEMENTS

The authors acknowledge Universiti Teknologi MARA (UiTM) for awarding them LESTARI grant (600-IRMI/MYRA 5/3/LESTARI (0114/2016). Gratitude also goes to the Selangor Syariah Chief Judge, all Syarie Judges and Sulh officers from Selangor Syariah Judiciary Department for their support given to undertake this study.

REFERENCES


Syariah Court Civil Procedure (State of Selangor) Enactment 2003.

Studies on Technology and Halal Food Security: A Review

Nur Syahidah Jalil, Azah Anir Norman* and Suraya Hamid

Faculty of Computer Science and Information Technology, Universiti Malaya (UM), 50603 Kuala Lumpur, Malaysia

ABSTRACT

Food security has an important place in global agenda. The innovation of technology in food security is helpful as the consumers are able to identify or track the inventories, to ensure the product is kept in optimal condition, for example by using RFID technology. The objective of this study is to identify trends related to user behaviour and acceptance of technology in food security. The focus is on the user, technology and food security and how it’s related to and affect each other for user acceptance and behaviour. This study adopted Kitchenham’s systematic literature review technique. Findings show user acceptance of technology in food security is influenced by the following variables - ease of use, convenience and effectiveness of the technology.

Keywords: Ease of use, food security, halal, technology, user acceptance

INTRODUCTION

Food security is now on the global agenda thanks to World Health Organization (WHO), an international body concerned with food security issues. Food security is important for Muslims as food must be of halal origins. Technology plays a role here to ensure halal sourced food. The world’s population will reach 8.1 billion in 2025 and 9.6 billion in 2050 (The world population situation in 2014). This will affect directly the demand for which may have an impact on food security from the Islamic perspective, the Malaysian government plays a crucial role in ensuring there is adequate halal food and appropriately plan and monitor food supplies, as mentioned by Ishak (2005).

Technology in food security is helpful for the user to identify or track the inventories, such as RFID (Radio Frequency Identification) and barcode technology. Junaini and Abdullah (2008) studied how
camera phone barcode scanning and MMS are used for halal verification, while (Toha, Tajuldin & Rahim, 2012), examined the use of smart handheld budget tracker (RFID) for this purpose. The present study looks at user acceptance of technology to create an effective halal food security framework. A systematic literature review was conducted based on Kitchenham. The focus was on specific halal stakeholders, namely halal agency, consumer, and entrepreneur. Consumers face problems in identifying halal products while entrepreneurs consider convenience in obtaining halal status for their product or premises. However, obtaining halal certification and recertification is not easy. New technologies can expedite and improve the halal certification process. However, they are not fully utilised or implemented because of lack of user acceptance.

Research Question
The following are the paper’s research questions. RQ1: What are the current trends in halal food security? RQ2: What are the purposes of technology in halal food security? RQ3: What socio-technical factors motivate the user to use the technology in food security? RQ4: What are the possible challenges in implementing food security technology? And, RQ5: what types of technology are used in ensuring halal food security?

MATERIALS AND METHODS
This study reviewed 52 selected papers published between 1999 and 2015. Primary and secondary data was examined based on Bano and Zowghi (2015).

Searching Process
Primary search process. This review is based on the RQ and using keyword for searching process. Boolean search (known as Boolean operator) is used in this review. This searching process use online database, Mendeley searching tools, Google, and journal archives among others.

Secondary search process. The researcher reviewed cited papers on this topic.

Selection Criteria
Keele (2007) mentioned the selection criteria to determine studies which can be included for review. The primary search process is based the title of the paper, abstract, finding and conclusion to filter which paper is relevant to the research area. Selected paper also must be related to the area of information technology / computer science / information systems.

Quality Assessment
Checklists are used in performing a quality assessment (QA) of papers to answer the research questions (Kitchenham et al., 2009). The checklists used for QA are: QA1: Are the aims clearly stated? QA2: Is the methodology is clearly described? QA3: Are the studies reviewed relevant to the topic? QA4: Are the findings of studies adequately described? This question will be evaluated based on scoring Y= 1, P= 0.5 and No = 0. The studies that score below 50% in the total
data extraction, will be excluded due to inadequate information.

Data Extraction

According to Keele (2007), data extraction is to identify how the information was obtained. Data extraction refers to the research question as guidance and based on details of publications. Context description refers to methodologies, technology used and theory. Finally, the findings, where researchers look into factors that motivate or hinder user involvement, acceptance, and implementation of technology in food security.

Data Analysis

In order to answer the research questions of this paper, 52 papers published between 1999 and 2015 were reviewed after filtering and selection. The RQ2 and RQ5 are answered by reviewing 15 papers and while 16 papers were reviewed to answer RQ3 and RQ4, while, in order to answer RQ1, 21 papers were reviewed. To answer RQ1, the abstract, finding and conclusion of the paper review helped to identify current halal food security trends. Papers related to technologies and halal food securities were prioritised in this literature review. To answer RQ2 and RQ5, selected papers were reviewed by checking the abstract, methodology and finding of the research to identify usage and the purpose of technology in food security. In order to answer RQ3 and RQ4, the conclusion of the selected papers was reviewed together with the abstract, methodology and findings. The researcher focused on user acceptance and possible hindrances or challenges in food security implementation and usage.

Conducting a Review

Using a Boolean search string, a number of papers were selected based on keywords and later filtered based on selection criteria as outlined in section 3.2. It entailed inclusion and exclusion criteria. A total of 48 papers were selected for the primary search process as discussed in section 3.3. Table 1 shows 52 papers were selected based on selection criteria. A secondary search process was performed and a further seven papers selected. Therefore, a total of 52 papers were reviewed and each selected paper was assigned with study ID (detail of Study ID can be referred to Appendix A). Figure 1 shows the flow of paper selection and review process in this study.

RQ1: After a careful selection process, only 21 papers were selected to be reviewed in this study. To answer RQ1, Backhouse and Mohamad (2014) was referred to in terms of study area. The searching process on halal food security trend is based on the key areas of halal industry in Malaysia. However, in this study, the researcher used key area in the searching process for global level. To answer RQ2 and RQ5, a total of 23503 results were displayed during the key word search. Once selection criteria were done, 15 papers were selected. For RQ3 and RQ4, 17025 papers popped up in keyword search but after a careful selection criteria and quality assessment, only 18 papers were selected.
Consumer, halal agency and entrepreneur are examined. The consumer is the party that consumes the product that has been certified by the halal agency. He or she depends on the halal agency to obtain the halal product and with the technology, it will contribute to the confidence level relating to the halal product. The technology can navigate the inventory from end to end and shows which product is certified by the halal agency. The halal agency is the body that certifies the product as halal. Consumers need systems that are easy, convenient and fast in getting halal product information. For the entrepreneur, they must adhere to all the process and procedures that have been set by the halal agency. In Malaysia, JAKIM is the Department of Islamic Development Malaysia and act as authority for halal products and procedure. The entrepreneur produces a halal product, which must then go through the halal certification process in order to be certified by the halal agency.

RESULTS

This section discusses how the papers were selected for reviews and their results in relation to the research questions.

Table 1 shows quality evaluation. Table 2 shows food product, additive and ingredient, and lifestyle sectors as the most studied while the services sector is the least. Table 3 shows technology used in halal food security.

![Figure 1. Flow of paper searching process](image-url)
### Table 1  
**Quality evaluation**

<table>
<thead>
<tr>
<th>Study ID</th>
<th>QA1</th>
<th>QA2</th>
<th>QA3</th>
<th>QA4</th>
<th>Total score</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>4</td>
</tr>
<tr>
<td>S2</td>
<td>Y</td>
<td>P</td>
<td>P</td>
<td>N</td>
<td>2</td>
</tr>
<tr>
<td>S3</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>4</td>
</tr>
<tr>
<td>S4</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>P</td>
<td>3.5</td>
</tr>
<tr>
<td>S5</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>4</td>
</tr>
<tr>
<td>S6</td>
<td>Y</td>
<td>Y</td>
<td>P</td>
<td>N</td>
<td>2.5</td>
</tr>
<tr>
<td>S7</td>
<td>Y</td>
<td>Y</td>
<td>P</td>
<td>Y</td>
<td>3.5</td>
</tr>
<tr>
<td>S8</td>
<td>Y</td>
<td>Y</td>
<td>P</td>
<td>P</td>
<td>3</td>
</tr>
<tr>
<td>S9</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>4</td>
</tr>
<tr>
<td>S10</td>
<td>Y</td>
<td>Y</td>
<td>P</td>
<td>Y</td>
<td>3.5</td>
</tr>
<tr>
<td>S11</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>3</td>
</tr>
<tr>
<td>S12</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>P</td>
<td>2.5</td>
</tr>
<tr>
<td>S13</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>P</td>
<td>2.5</td>
</tr>
<tr>
<td>S14</td>
<td>N</td>
<td>P</td>
<td>Y</td>
<td>P</td>
<td>2</td>
</tr>
<tr>
<td>S15</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>4</td>
</tr>
<tr>
<td>S16</td>
<td>N</td>
<td>P</td>
<td>Y</td>
<td>P</td>
<td>2</td>
</tr>
<tr>
<td>S17</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>4</td>
</tr>
<tr>
<td>S18</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>4</td>
</tr>
<tr>
<td>S19</td>
<td>N</td>
<td>P</td>
<td>Y</td>
<td>P</td>
<td>2</td>
</tr>
<tr>
<td>S20</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>3</td>
</tr>
<tr>
<td>S21</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>4</td>
</tr>
<tr>
<td>S22</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>4</td>
</tr>
<tr>
<td>S23</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>P</td>
<td>3.5</td>
</tr>
<tr>
<td>S24</td>
<td>N</td>
<td>P</td>
<td>Y</td>
<td>P</td>
<td>2</td>
</tr>
<tr>
<td>S25</td>
<td>Y</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>2.5</td>
</tr>
<tr>
<td>S26</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>4</td>
</tr>
</tbody>
</table>

### Table 2  
**Trending of Halal food security**

<table>
<thead>
<tr>
<th>Paper study ID</th>
<th>Year</th>
<th>Author</th>
<th>Halal Sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1</td>
<td>2013</td>
<td>Wright &amp; Annes (2013)</td>
<td></td>
</tr>
<tr>
<td>S2</td>
<td>2014</td>
<td>Aziz &amp; Sulaiman (2014)</td>
<td></td>
</tr>
<tr>
<td>S3</td>
<td>2014</td>
<td>Zulfakar, Anuar, &amp; Ab Talib (2014)</td>
<td></td>
</tr>
</tbody>
</table>
Table 2 (continue)

<table>
<thead>
<tr>
<th>Paper study ID</th>
<th>Year</th>
<th>Author</th>
<th>Halal Sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>S5</td>
<td>2014</td>
<td>Alphonce, Alfnes, &amp; Sharma (2014)</td>
<td>/</td>
</tr>
<tr>
<td>S6</td>
<td>2012</td>
<td>Nakyinsige, Che Man, Sazili, Zulkifli, &amp; Fatimah (2012)</td>
<td>/</td>
</tr>
<tr>
<td>S7</td>
<td>2008</td>
<td>Bonne, &amp; Verbeke (2008)</td>
<td>/</td>
</tr>
<tr>
<td>S8</td>
<td>2010</td>
<td>Wahid, Othman, &amp; Fernando (2010)</td>
<td>/</td>
</tr>
<tr>
<td>S9</td>
<td>2011</td>
<td>Nasir, Norman, Fauzi, &amp; Azmi (2011)</td>
<td>/</td>
</tr>
<tr>
<td>S10</td>
<td>2013</td>
<td>Ulca, Balta, Çağın, &amp; Senyuva (2013)</td>
<td>/</td>
</tr>
<tr>
<td>S11</td>
<td>2012</td>
<td>Nakyinsige, Man, &amp; Sazili (2012)</td>
<td>/</td>
</tr>
<tr>
<td>S13</td>
<td>2013</td>
<td>Ikram, Rina, Khanapi, Ghani, Samad, &amp; Basari (2013)</td>
<td>/</td>
</tr>
<tr>
<td>S14</td>
<td>2014</td>
<td>Shah, &amp; Yusof (2014)</td>
<td>/</td>
</tr>
<tr>
<td>S16</td>
<td>2012</td>
<td>Hunter (2012)</td>
<td>/</td>
</tr>
<tr>
<td>S17</td>
<td>2015</td>
<td>Novianti (2015)</td>
<td>/</td>
</tr>
<tr>
<td>S18</td>
<td>2015</td>
<td>Kadir, Shamsuddin, Rahim, &amp; Rosa (2015)</td>
<td>/</td>
</tr>
<tr>
<td>S20</td>
<td>2015</td>
<td>Arif, &amp; Sidek (2015)</td>
<td>/</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Additive and ingredient</th>
<th>Food product</th>
<th>Pharmaceutical</th>
<th>Lifestyle</th>
<th>Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>total</td>
<td>6</td>
<td>4</td>
<td>5</td>
<td>2</td>
</tr>
</tbody>
</table>

Alphonce, Alfnes, & Sharma (2014) / 
Nakyinsige, Che Man, Sazili, Zulkifli, & Fatimah (2012) / 
Bonne, & Verbeke (2008) / 
Wahid, Othman, & Fernando (2010) / 
Nasir, Norman, Fauzi, & Azmi (2011) / 
Ulca, Balta, Çağın, & Senyuva (2013) / 
Nakyinsige, Man, & Sazili (2012) / 
Little, Gillespie, De Louvois, & Mitchell (1999) / 
Ikram, Rina, Khanapi, Ghani, Samad, & Basari (2013) / 
Shah, & Yusof (2014) / 
Ghani, Ikram, & Basari (2015) / 
Hunter (2012) / 
Novianti (2015) / 
Kadir, Shamsuddin, Rahim, & Rosa (2015) / 
Farooqui, & Nurullah (2013) / 
Arif, & Sidek (2015) / 
Maharom, Hussin, Idrus, Safar, & Zulkifli (2011) /
DISCUSSION

This section discusses findings based on review of selected papers on technologies related to halal food security to answer the research questions. The focus was to examine user acceptance of the technologies used in food security.

**RQ1: What are the current trends in halal food security?** Table 2 show trends in halal food security based on 21 papers published between 1999 and 2015. The focus was on five halal sectors: food products, pharmaceutical, lifestyle, services, and additive and ingredient. The first three sectors were the most commonly studied as they affected customers most during the period of study while the services sector was the least popular where only two papers focused on this. Under the food product theme, Nakyinsige, Man and Sazili (2012) (S11), and Nasir, Norman, Fauzi and Azmi (2011) (S9), focused on halal authentication of the food product, while in lifestyle sector, the focus was on food premises (Novianti, 2015) (S17), and Alphonce, Alfnes and Sharma (2014) (S5). Both focus on halal authentication but using different technologies.

**RQ2: What are the purposes of technology in halal food security?** Technologies offer many advantages in ensuring halal food security. In Table 3, it can be seen the technologies used in halal food security have different capability and usage. It was found there is need for better tracking and tracing of halal food. Technology is important to improve monitoring of product quality and save energy in the production process. Technologies used in to track and monitor halal food provide a real-time and...
accurate information and for safety purpose, efficiency and cost saving. Based on table 3, the most common technology used is RFID, known as tracking or identification technology, as mentioned by (Juels, 2006). Therefore, it is clear RFID is preferred over other technologies for its utility in tracking halal food.

RQ3: What socio-technical factor motivated the user to use technology in halal food security? A technology is considered successful if it is widely accepted by all the users and its growth is influenced by user involvement. The socio-technical factors that motivated the use technology in food security was examined. Here, socio-technical is the combination and interaction of social and technological factors. Based on the selected papers examined (paper study ID 35 to 53), it was found several factors can boost widespread use of technology in food security, such as ease of use, convenience, efficient, and useful, perceived at the personal and societal level. Public awareness, social influence, and knowledge also play a role in user acceptance of technology.

RQ4: What are the possible challenges in food security technology implementation and usage? To answer this, 18 papers were reviewed (S35 to S52). It was found people are willing to implement the technologies offered in halal food security. However, this is usually associated with large costs for the individual and the organisation, which many may not be able to afford (Tan, Razali, & Husny, 2012) (S35). Therefore, funding is an important consideration in implementing or adoption of technology. This is aggravated by lack of knowledge and its feasibility, both economically and technically. Insufficient IT support, risk, and uncertainty is the main hindrance of technology implementation and usage by management, provider or consumer.

RQ5: What type of technology is used in food security? The most popular is RFID technology for its use in tracking halal products. Based on 15 selected papers, the most common technologies in halal food security are: Near Field Communication (NFC), watermarking – QR code, E-Nose, Barcode, RFID, Multimedia Message services (MMS), camera, Global Systems for Mobile Communication (GSM), Global Positioning System (GPS) and Internet technology. In terms of consumer concerns related to halal products, RFID is the most advanced technology that has been used to track and trace halal products, especially for halal authentication purposes.

CONCLUSION AND RECOMMENDATION FOR FUTURE STUDY

This paper has identified trends in user acceptance of technologies related to halal food security. It was found food product, additive and ingredients, and lifestyle are the most frequently discussed in the literature on halal sector. The RFID is the most popular technology well known for tracking purpose. Knowledge, awareness and technical aspects are the important factors when implementing technologies in halal food security. Therefore, this
study had contributed to understanding the current trend in research and the research gap in halal food security. There is only a small number of studies that looked at the application of RFID technology in halal sector. Therefore, it is hoped future studies can address this.

REFERENCES


APPENDIX A

<table>
<thead>
<tr>
<th>Study ID</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study ID</td>
<td>Title</td>
</tr>
<tr>
<td>----------</td>
<td>-------</td>
</tr>
<tr>
<td>Study ID</td>
<td>Title</td>
</tr>
<tr>
<td>---------</td>
<td>-------</td>
</tr>
</tbody>
</table>
Spousal Contribution and Fair Division of Matrimonial Assets: A Case Study of Malaysian Muslims

Noorul Huda, S.1*, Najibah, M. Z.2 and Siti Khadijah, A. M.1

1Academy of Contemporary Islamic Studies (ACIS), Universiti Teknologi MARA (UiTM), 40450 Shah Alam, Selangor, Malaysia
2Kuliyyah of Laws, International Islamic University Malaysia (IIUM), 53100 Kuala Lumpur, Malaysia

ABSTRACT
The contributions of a spouse in terms of matrimonial properties are essential in determining the proportion of share for the divorced spouses. In order to determine a fair and equitable share of assets, the spouses have to show the quantum of their contributions; this has caused delays in the Shariah courts in Malaysia and prolonged the litigation process. This study examines the effectiveness of the statutory law in division of matrimonial assets by examining court practices in determining the proportion of share. For that purpose, a qualitative method was adopted and 215 unreported cases within the period of 2000-2012 was analysed. Findings showed inconsistencies in the court practices of asset division, especially when only contribution of the parties (in ascertaining their share) are factored. This study suggests that the court should use a more general consideration such as the interest of the parties and children when determining the proportion. This is to ensure a fair distribution of wealth and assets to the divorcing spouses.

Keywords: Fair distribution, matrimonial assets, quantum, Shariah Court, spouse contribution

INTRODUCTION

The division of matrimonial assets in Shari’ah Courts in Malaysia has several stages subject to the specific provision in Section 122 of the Islamic Family Law Enactments. First, matrimonial assets are factored in division of wealth and second, ascertaining the portions to the divorcing spouses. All state shariah legislations define matrimonial assets or harta sepencarian as property jointly acquired by the husband and wife during their marriage. In cases of divorce, Section 122 of Islamic Family Law Enactment is referred to by the court in dividing these collective assets.
Despite this, fair and equitable divisions of assets to the parties have not been part of the court’s considerations. As a result, the parties encounter difficulties especially when the only assets available are those assets acquired during the marriage. This is further aggravated when the divorcing spouse fails to settle the distribution either through sulh proceeding or another form of settlement outside the court (Daud, 2002, p. 46). This loosely drafted provisions have led to various interpretation of the court in dividing the assets. Issues such as direct or indirect contributions of a spouse are not well defined. The effort made by the spouse in adding to the value of existing assets is also not clearly stated. This has resulted in various interpretations among judges to decide the extent of the contribution by each party.

This study, therefore, aims to examine the law applied by the court in dividing matrimonial assets. The focus is on the spousal contribution as an important factor in determining the proportion of share. The paper begins by explaining the statutory law in the division of matrimonial assets among Muslims in Malaysia. The methodology of the study is elaborated in the subsequent section. Analysis of findings are presented and discussed prior to the conclusions.

**Statutory law on Contribution as factor in Division of Matrimonial Property**

Section 122 of Islamic Family Law Enactment/Act, which embodies the principle of division, provides that:

(1) The Court shall have power, when permitting the pronouncement of *talaq* or when making an order of divorce, to order the division between the parties of any assets acquired by them during their marriage by their joint efforts or the sale of any such assets and the division between the parties of the proceeds of the sale.

(2) In exercising the power conferred by subsection (1), the Court shall have regard to-

   (a) the extent of the contributions made by each party by money, property, or labour toward acquiring the assets;

   (b) any debts owing by either party that was contracted for their joint benefit;

   (c) the needs of minor children of the marriage and, subject to those considerations, the Court shall incline towards equality of division

(3) The Court shall have power, when permitting the pronouncement of *talaq* or when making an order of divorce, to order the division between the parties of any assets acquired during the marriage by the sole effort of one party to the marriage or the sale of any such assets and the division between the parties of the proceeds of sale.

(4) In exercising the power conferred by subsection (3) the Court shall have regard to-

   (a) the extent of contributions made by the party who did not acquire the
assets to the welfare of the family by looking after the home or caring for the family:

(b) the needs of minor children of the marriage, if any, and, subject to those considerations, the Court may divide the assets or the proceeds of sale in such proportions as the Court deems reasonable, but in any case, the party by whose efforts the assets were acquired shall receive a greater proportion.

(5) For the purpose of the section, references to assets acquired during a marriage by one party include assets owned before the marriage by one party that has been substantially improved during the marriage by the other party or by their joint efforts.

The above provisions clearly embody the rules the court must adhere to in dividing matrimonial assets acquired during marriage upon granting a pronouncement of talaq. The section particularly highlights two subsections: first, sub section where the court orders the division between the parties of any assets acquired by them during their marriage by their joint efforts and subsection 3 where the courts order the division between the parties of any assets acquired during the marriage by the sole effort of one party to the marriage. For a division of the first category, the court shall incline towards equality of division. The division, however, is subject to certain factors, which the court has to take into account, such as the extent of the contribution made by each party in the form of money, property or work towards acquiring the assets. Besides, any debts owed by either party, which was contracted for their joint benefit, will also be considered. The needs of minor children, if any, from the marriage, will not be ignored as well.

Concerning the second category of assets, the court may divide the assets in proportion, as it deems reasonable, subject to certain factors. The extent of contribution by the party who indirectly contributed to the assets by looking after the house and the family is deliberated in addition to the needs of minor children from the marriage, if any. In any case, the party that contributed significantly in acquiring the asset shall receive a greater proportion.

Section 122 describes assets as assets of joint and sole effort. The statutory and judicial definition of harta sepencarian was founded based on effort and contribution of each party during the marriage (Ahmad Fikri Bin Mahmud v. Habibah Binti Muhamad (2007) 23 JH, part 1, 23). Thus, the contribution to the acquisition of asset acts as a significant proof to the existence of joint or sole effort of parties that would be entitled to its share. This clarifies that marriage alone does not lead to contribution to matrimonial assets that permit the party (is) to their share after divorce (Suwaid, 2001, p. 70).

However, the contents of this particular are general which invite the judge to use his/her discretion while evaluating and deciding the reasonable portion for the parties. For example, Section 122(2) states
that in dividing joint effort assets, the court shall consider the extent of the contributions made by each party in the form of money, property, or labour towards this acquisition and subject to those considerations, the court shall be inclined towards equality of division. This general provision invites more discretion of the court to divide the assets, especially when the contribution involves disparity of proportion of financial contribution. On the other hand, the court also has discretionary powers not to be inclined towards the equality of shares. Section 122(3) is also unclear due to the generality of the sole effort contribution as factors in determining the spousal share (Norsiah Bt Arshad v. Marsum Bin Paing (2009)).

In certain cases, the court loosely interprets section 122(1) with regard to the definition of direct contribution. Household work and responsibilities carried out by a housewife are recognised as contribution and effort to the acquisition of assets via joint efforts. This issue is highlighted in case of Haminah Bee v. Shamsuddin (1980) where the court granted 1/2 of the assets to the plaintiff after the court took into account the indirect contributions of the wife during the course of their marriage. The court also granted equal share of business assets after taking into consideration the moral support the wife gave to the spouse to get the dato’ title which had a positive impact on the husband’s business (Tengku Anum Zaharah v. Dato’ Dr. Hussein (1980)).

METHODS

This study employed a qualitative method in analysing statutory law and other legal provisions governing the application of the law in the division of matrimonial asset. Case law analysis was also conducted to improve the statutory provision. The focus of this research is on problems in applying the existing law. Therefore, specific reference was made to reported cases in various law journals to identify the factors and variables that the court commonly apply when determining the share. Content analysis of the judicial decision of reported cases was focused on the practical approaches of the court in applying the law.

The study also reviewed case studies of unreported cases, which were carefully selected from six Shariah Courts between 2000 and 2012 that represented all the states in Malaysia, namely Selangor with the highest population density representing the Western Region, Penang, also densely populated, representing the Northern Region, Johor representing the Southern Region, Kelantan representing the population of the Eastern Region, and Sarawak representing the population of East Malaysia. Cases from the state of Perak were included since it has a similar law. Content analysis was applied in assessing the practical approaches of the court based on three important variables: scope of matrimonial assets, monetary and non-monetary contributions and the proportion of division of matrimonial assets.
RESULTS AND DISCUSSION
The findings and recommendations of the study are discussed below.

Judicial Approaches in Normal Proceedings
It was found the court relies upon the stipulated provision in section 122 of Islamic Family Law, the practice directions and previously decided cases in deciding the division of share of matrimonial assets between the spouses. Hence, the court was guided by a reliable authority and sources in arriving at a fair decision.

Statutory Interpretations
In determining the sole effort and joint effort assets, the court should adhere to the stipulated provision by identifying the types of asset. This is done by using statutory provisions where the law emphasises the element of contribution. The court determines which assets are jointly acquired upon establishing the money, labour or property that are used to acquire the assets. The physical contribution in taking care of the family should be factored in the case of the party who did not directly acquire the assets.

In dividing sole effort assets, besides adhering to the provision which directs the court to divide the property or the proceeds of sale in a particular proportion as the court thinks reasonable, the court ensures that those who contribute more to the acquisition will acquire a greater proportion as outlined in the law (Section 122(3) and Section 122(4), IFLA). Nevertheless, in certain cases, the court used its discretion even though the asset is sole effort property. For example, in a case where the wife claimed equal share out of the total amount of matrimonial property acquired by the sole effort of the husband, the court granted the wife equal share out of the assets. Therefore, the court used its discretionary power by granting equal share despite the fact that it may deviate from the original principle of allocating a greater proportion to the acquirer in dividing a sole effort property.

Monetary Contributions
Monetary contribution to the acquisition of assets is considered as direct when it is made for the purchase of property or its improvement that increases the asset’s value such as renovation of a house (Zaiton Binti Enchi Alli v. Hussin Bin Enchi Mat 13100-017-0273-2007 (Sarawak); Norhayati Binti Yusoff v. Ahmad Shah bin Ahmad Tabrani 03000-017-0005-2007 (Kelantan); or construction of a house (Zaliza Binti Aziz, Khatijah Binti Pawanchik v. Ahmad Bin Salleh 07100-017-0251-09 (Perak). In the case of Hamidah Binti Abdullah v. Mohd Johanis Bin Busu (03000-017-099-2001) in Kelantan, however, the court granted only 1/3 of the share to the plaintiff, a housewife, even though she had contributed in acquiring the asset. The plaintiff took a part time job where the proceed was used for the renovation of the house and family expenditure. It was also used as family income when the respondent was studying for a degree. It is clear in this case that the court ignored the renovation as part of the
direct contribution to the acquisition of assets.

Actual contribution is assessed based on payment related to the purchase of the asset such as mortgage installment, deposit, premium and tax (Normah Binti Mohd Ali v. Abdul Rahman Bin Embong 01100 017 231 2003), balance of purchase price or payment for adding to the asset value by making an improvement and renovation on the asset. The wife is the main contributor when the purchase of the asset was solely financed by her or from the amount obtained from her EPF balance. In the Sarawak case of Fatimahwati Binti Bakawi v. Sapian Bin Jamain (13100-017-0438-2003(Sarawak) the court held that the plaintiff had made a direct contribution to the matrimonial home and ordered equal share of the asset to be granted to the plaintiff as she had paid the deposit for the purchase of the home.

When a monetary contribution is identified and determined based on literal interpretation of statutory law, the court orders the asset to be of equal ratio. In Sarawak case of Mohmad Peridar Bin Hj. Leman v. Anni Binti Osman (13100-017-0776-2001 (Sarawak), the matrimonial home was registered in joint names. The house was purchased in 1989 using a joint loan in which RM55000 was paid by the plaintiff and RM49,000 by the defendant. After the divorce, the defendant stayed in the said house. The court granted equal share of the house to the plaintiff. The rule is equally applicable if there is difficulty to determine the extent of the spouse’s joint effort in acquiring the asset. The court also faced difficulty to determine the contribution since the parties disputed the quantum, which the court could not decide. In that case, the court granted equal division.

The court is also inclined to an equal division when a quantum of money used for payment is related to the improvement and the acquisition of the asset in a longer marriage. In the Sarawak case of Dayang Norain Binti Awang Putra v. Awang Sabeli Bin Awang Morshidi (13100-017-0103-2005), the marriage lasted for 21 years. The husband paid RM354 in monthly instalments for their house via a government loan. However, the plaintiff proved that both spouses had jointly paid for the renovation amounting to RM15,000. In this case, the court exercised discretion. The court is inclined towards equal division in the situation where there is an improvement of property irrespective of each party’s contribution, and the duration of the marriage. In the Sarawak case of Zaiton Binti Enchi Alli v. Hussin Bin Enchi Mat (13100-017-0273-2007), the matrimonial house was in joint names. The plaintiff and the defendant had made joint monetary contributions during their 25 years of marriage where the husband paid for mortgage installment of the house valued at RM 90,000 while the plaintiff contributed RM8487 payment to renovate the house. In 2007, she further contributed RM25,000 for renovating the house. The court held that, based on the payments made by the plaintiff, she is entitled for equal share of the house. This indicates an inconsistency in practice when the court did not merely base
its decisions on contributions of either party to the acquisition of the asset, but also other factors such as the duration of a marriage.

Inconsistency in court decision was also noted in the case of Wan Petri Sadom @ Wan Zurihana Binti Wan Mohamad v. Che Ismail Bin Ahamad (03100-017-1393-2007) and Norpipah Binti Tahit v. Za’ba Bin Ahmad (13100-017-0317-2010). In the case of Wan Petri Sadom @ Wan Zurihana Binti Wan Mohamad v. Che Ismail Bin Ahamad (03100-017-1393-2007), the court awarded 9.17% net value of RM280,000 (amounting to RM20,000) to the wife as her entitlement based on her monetary contribution for the renovation of two houses situated at Pair Puteh, Kelantan. However, the rule was not applied in the Sarawak case of Norpipah Binti Tahit v. Za’ba Bin Ahmad (13100-017-0317-2010), where the plaintiff paid mortgage instalments from 2005 to 2008 as well as a deposit of RM3000. The court divided the amount to be shared equally and refunded to the plaintiff being payment for the plaintiff’s contribution to the acquisition of the house. The court then declared that the house was under the absolute ownership of the defendant.

Though in general, the court adheres to the literal provision of the law that requires consideration to direct financial contribution of the parties, in certain cases, however, the court deviates from the general principle when the property was acquired by indirect contribution. In the Penang case of Zaliza Binti Aziz, Khatijah Binti Pawanchik v. Ahmad Bin Salleh (07100-017-0251-09), their apartment was jointly owned and was purchased at RM150,000 through a joint loan. The plaintiff paid RM12 000 from her EPF withdrawal while the rest was paid by the husband. In addition, the plaintiff contributed for renovations, furniture and equipment, family expenditure and daily expenses. The court, after considering both the direct and indirect contributions of the wife, granted her equal share of the said house. This proved that the court took into consideration the wife’s financial contribution to make the house comfortable. This case indicates the wife could still obtain equal shares of matrimonial property upon considering other monetary contributions even though she contributed minimally in acquiring the asset. This shows the court did not follow the law strictly.

Similarly, if the wife is the sole breadwinner and has contributed a large amount to the purchase price of a jointly owned matrimonial house, she will obtain a greater share. In the Sarawak case of Hasmi Binti Ibdrahim v. Khairul Azwal Bin Osman (13100-017-0270-2007), even though the husband contributed to the deposit payment of the house priced at RM56,000, the wife contributed solely to the actual mortgage payment of the house when the husband went missing. In this circumstance, the court regards the assets as the sole property of the wife. This illustrates that principle relating to contribution is an essential criterion in determining the proportion of the share of assets regardless of who is the contributor.

In cases where the monetary contribution of a husband is a minimal, it is observed that the share is determined based on the
contribution of each spouse. In the Kuching case of Azfawani Binti Haji Mohd Azami v. Kushahri Bin Haji Mujir (13100-017-0027-2007), a house was purchased in joint names at RM197,000 in 2001 where both parties paid the price. In 2007, the defendant stopped working and halted the mortgage instalments, and the plaintiff continued the payment. Additionally, the plaintiff-maintained mortgage payment using her own money totalling more than 95% of the whole monetary contribution. The court decided that the plaintiff contributed more to the payments of the house and granted her a 96.5% share. This case indicates that the court may grant a greater share to the wife.

Property and Work

In addition to monetary contributions, the analysis shows that the court also recognises contributions made in the form of property as a direct contribution. For example, a wife traded in a car as partial payment for a new car with the remaining balance being paid by the husband. The court regards such contributions in the division of asset. In Sarawak case of Mohamad Peridar Bin Hj Leman v. Anni Binti Osman (13100-017-0776-2001), their car was traded in for RM4500 to purchase a Kancil. The court held that the Kancil was matrimonial property and the proceeds of the sale of the car were to equally be divided. An option was given to the party to purchase the interest of the other part of the car. However, in another situation, the court deviated from the literal approach by not dividing the car purchased out of the “trade-in” as a matrimonial asset. The court asked the other party to refund the trade-in amount of RM4500 to the defendant (Norziana Binti Khamis v. Mohd Shukur Bin Khadid 07100-017-0379-10).

The court also takes into account the contribution in the form of work. Work is recognised as a direct contribution if the contributed party enables the spouse to acquire new assets or increases the value of existing assets or made some improvement to the asset’s value. In determining the proportion of share, in this case, the extent of work by the spouse is deliberated by the court. Normally, an equal division is an appropriate share of the work done by the spouse. This is illustrated in Penang case of Zarifah Binti Jahaya v. Samad Bin Said (07100-017-0246-05) where the plaintiff claimed that she worked with the defendant in the retail business until they were able to acquire new assets consisting of a house, vehicle, food stall and 15 cows. The court ordered the assets to be equally divided.

In another situation, the court needs to prove on equal or similar strength in work and nature of work where mere physical work does not constitute as a contribution to the acquisition of the asset. In the Perak case of Bahamuddin Bin Ibrahim v. Kartini Binti Ibrahim (08600-017-0023-2004) the plaintiff claimed for a share of a business asset consisting of two shops. The plaintiff assisted the defendant in managing the business by lifting goods and gave a lift to the defendant. It was not considered by the court as work, as the contribution was unclear and inconsistent. The contribution is
not made in relation to the nature of the work of the business and the court presumed that the work done by the plaintiff was merely as leisure to assist the defendant in his capacity as a husband. Thus, the case illustrates that physical work must be actively participated to be considered as a contribution.

The preceding discussions show the court considers direct contribution either in the form of money, work or property if the contribution is made to acquire an asset. However, the study also shows that the approach of the court is inconsistent in dividing the joint effort assets based on monetary contribution. When the amount contributed is minimal, the court deviates from the statutory provision by considering the indirect contribution of the homemaker wife and the proportion decided is one, which is equal. The court generalises the contribution by considering both indirect and direct contributions of the spouses in ascertaining the quantum of share related to joint effort assets.

Indirect Contributions of a Homemaker

The contribution of homemaker has been addressed in the distribution of matrimonial asset. Analysis on 12 decided cases ¹ in several states show that in dividing sole effort assets, the homemaker’s right to matrimonial property is recognised for her service to take care of the family. Therefore, the homemaker will have an appropriate amount of share of matrimonial assets for her service in taking care of the family. It has been observed that the extent of homemaking contribution is confined to her physical efforts to serve her family during a reasonable length of the marriage. In the Sarawak case of Zaiton Binti Enchi Alli v. Hussin Bin Enchi Mat (13100-017-0273-2007), the facts show that the plaintiff was a full-time homemaker and did not directly contribute towards the acquisition of matrimonial assets. The court after considering her homemaking contribution, ordered ¼ of the share of the asset to the plaintiff as her proportion of indirect contribution in maintaining the asset, taking care of the children and for discharging her role as a homemaker without any assistance.

¹ These cases shows that the court awarded 1/3 share based on purely homemaking contributions; see Zaidah Bt. Md. Zin v. Abdul Razak Bin Khamis 07100-017-0230-07 (Penang), Mohamad Romdon Bin Ariffin v Su’adiah Binti Abd Rahman 07100-017-0215-06 (Penang), Puteh Bt. Sharip v. Ishak Bin Desa 07100-017-0215-07 (Penang), Rokiah Binti Sultan v. Razali Bin Hassan 07100-017-325-09 (Penang), Suharni Binti Samjuddin v. Mohamad Ishak Bin Abdu Hamid 07100-017-0197-06 (Penang), Burhan Abdul Manap 07100-017-0278-09 (Penang), Faridah Sueiman v. Mohd Noh Othman mal case no. 86-2000 (Penang), Habsah Binti Sad v. Surianata Binti Baharum, Shaari Bin A. Samad 07100-017-49-01 (Penang), Saurah Amma Bt Pickiri Saboo v Kuttabuteen Bin Aboo Salin 707100-017-0108-03 (Penang), Noraini, Rosenah Bt Ibrahim v. Ahmad Bin Ramli 07100-017-71-02 (Penang). In Jusoh Bin Saman v. Tuan Bidad Binti Tuan Kendor 03000-017-0003-2012 (Kelantan); Norasnah Bt Mahmud v. Amin Bin Abdullah 03100-017-0059-2003 (Kelantan); Semah Binti Daud v. Hassan Bin Awang 03000-017-0004-2008 (Kelantan); see cases Tom Bt Nan v. Wan Adib Bin Wan Teh 08100-017-68-2006 (Perak) and Zawiah Bt Aki v. Abu Shahar B. Hj Yeop Wasil 08100-017-0097-2007 (Perak).
The court also recognised a wife’s financial contribution in family expenditure such as spending for home furnishing (Faridah Sueiman v. Mohd Noh Othman, Zaliza Binti Aziz, Khatijah Binti Pawanchik v. Ahmad Bin Salleh 07100-017-0251-09 (Penang), as indirect contribution and significant in dividing the sole effort assets. In the Kelantan case of Aimi Nazura Binti Nawi v. Mohamad Sobri Bin Ahmad (03000-017-0010-2007), the court of appeal increased the plaintiff’s share and granted her 1/3 share of the value of the matrimonial home after taking into account her direct and indirect contribution in the acquisition of the home during the nine years of their marriage. The plaintiff was formerly a teacher and contributed to the family’s expenditure. The court considered the plaintiff’s contribution to the family allowed the respondent to acquire other assets such as a house. Thus, this case shows that in dividing sole effort assets, the court takes into consideration the monetary contribution of the wife in meeting family expenditure. This highlights the problem associated with the difficulty to identify direct and indirect contribution resulting in inconsistency in the court’s approach, especially in considering the monetary contributions to family expenditure. Thus, this creates a problem in the interpretation of the contribution due to the rigidity of the provision.

The study observed that the court provides substantial credit to a full-time housewife and working wife. In the Kelantan case of Zaiton binti Abdullah v. Zuha Bt. Hamzah (03100-017-0920-2005), the plaintiff who worked as a part time cosmetic promoter apart from being engaged in doing house chores and child caring throughout the marriage was awarded 1/3 of the matrimonial property. The court recognises house chores carried out by the working wife by allocating the portion of a share of assets, which was not acquired by the plaintiff in substantially discharging her role as wife and mother.

The difficulty in identifying direct and indirect contribution has resulted to some extent in the court not awarding 1/3 share and grants 1/8 and 1/4 to the homemaker. The court, in majority of the cases, adopted a literal interpretation of section 122(3) and (4) where the homemaker’s contribution though very substantial, was seen as irrelevant and not factored in when dividing joint effort assets. However, in a few cases, the courts deviated from the literal interpretation when an indirect contribution was considered in dividing the joint effort assets. For example, in the case where monetary contribution is minimal, consideration will be given to the wife’s contribution as a homemaker. However, in several cases, it is observed that consideration of the division was based on the extent of both direct and indirect contributions. If the amount of money contributed to the acquisition of assets was not equal, the court would resort to the indirect contributions made to entitle the party for 1/3 portion of the matrimonial property.

The study shows that different
approaches were adopted by the court in dividing the sole effort assets of the breadwinner husband or wife to determine appropriate proportions of their matrimonial assets. The extent of indirect contributions made to acquire the asset was relevant. This was illustrated in the Penang case of Burhan Bin Abdul Manap v. Norazlina Binti Yusof (07100-017-0278-09) where the marriage lasted for six years without a child and the matrimonial home was purchased in 2002, whereby in 2003, the defendant stayed in the said house. The plaintiff paid for the acquisition of the assets including down payment and mortgage instalments. Despite the plaintiff’s contribution, the court considered the wife’s role in maintaining the house and doing house chores for six years and awarded 1/8 of the net value of the proceeds of the house to the plaintiff.

However, in the case of Mohamad Romdon Bin Ariffin v. Sa’adiah Binti Abd Rahman (07100-017-0215-06), the matrimonial home was in joint names and was purchased during their 25 years of marriage. The plaintiff claimed that the inclusion of the defendant’s name in the title was only out of mercy, as the defendant did not make any monetary contributions to the purchase payment of the asset, as she was a homemaker. The court ruled that the house was not matrimonial property and the plaintiff’s claim to remove the defendant’s name registered in the title was allowed. Even though the facts of the case showed that there is an intention to give a gift to the wife, the wife’s rights to the property was denied as the court decided she did not contribute to acquiring the asset.

The court, however, hesitates to award a portion of share to the husband who has not contributed to the acquisition of the asset if the husband fails to prove any indirect contribution. In the Penang case of Norhana Bt Abd Razak v. Ahmad Nazri Bin Zainuddin (07100-017-0196-08) the plaintiff claimed that she had made all mortgage instalments of the matrimonial home for eight years. Besides the instalments, the plaintiff withdrew from her EPF to pay deposit and settlement of debt though the home was registered in joint names. The case was decided without the defendant’s presence and the court held that the home was not matrimonial property and the house was the absolute property of the plaintiff. The court highlighted that the husband was responsible to provide a home for his wife and pay for a purchase price of the home and not to place the burden of the payment to the wife. The court considered the wife’s voluntary contribution as a good effort and thus was valued as an effort to assist the husband to have a happy family.

The above cases indicate that the court will not be inclined to award equal division if the asset is acquired by sole effort. Here, the acquirer of the asset should receive a greater portion. In case of sole effort assets, the division cannot be equal. However, in certain cases, it is observed that the court did not follow the general rule strictly, especially after taking into account other considerations such as the duration of the marriage. In the Penang case of Noraini Binti Abdullah v. Aziz Bin
Abdullah (07100-017-0003-03), despite the fact that the husband had been paying for mortgage instalments for 13 years before the divorce, the court considered the wife’s contribution as a homemaker for 40 years. The plaintiff did assist the defendant in running a business where the income from the business was used for family expenditure that entitled her to an equal share.

The above discussion proves that the prescribed proportion of share allotted to homemakers as per the law is not an absolute right. The court seems to consider other factors and widens the scope of contribution and not confining only to the direct acquisition of assets but indirectly towards the acquisition of such assets. In these situations, it is observed that the court awarded equal portions. This is observed in many cases, specifically in Kelantan, where the indirect contribution has been loosely interpreted.

CONCLUSION

In Malaysia, the law provides a general rule to guide the court in dividing matrimonial assets. However, it has loopholes, which led to a different approach on how actual distribution should be made. This had resulted in inconsistencies in court rulings and practices regarding asset division and ascertaining their share, especially when they are based merely on the contribution of parties. Thus, this study suggests the court should generalise these considerations and to consider other factors in dividing the matrimonial assets such as duration of the marriage, the welfare of the divorced wife and her dependents such as her ailing father or mother. In addition, equal weight should be given to nonfinancial contributions as they are part and parcel of necessities in life. Serious attention should, therefore, be given to reform existing provisions in order to ensure just and equitable division of matrimonial assets.

REFERENCES

Ahmad Fikri Bin Mahmud v. Habibah Binti Muhamad 2007 23 JH (1), 23 (Malaysia).


Norsiah Bt Arshad v. Marsum Bin Paing 2009 3 ShLR 70 (Malaysia).


Islamic Family Law Enactment (Selangor), S 122 (2003).

Islamic Family Law Enactment (State of Malacca), S 122(2002).

Islamic Family Law Enactment (Terengganu), S 122 (1985).

Islamic Family Law Enactments (State of Sabah), S122 (1992).

Islamic Family Law Ordinance (Sarawak), S122 (2001).

The Editorial Board of the Journal of Social Sciences and Humanities wishes to thank the following:

Amal Hayati Ishak  
(UiTM, Malaysia)

Mohd Ridwan Abd Aziz  
(UUSM, Malaysia)

Norlelawati Ariffin  
(UUSM, Malaysia)

Amily Fikri  
(UiTM, Malaysia)

Mohd Roslan Mohd Nor  
(UUM, Malaysia)

Nur Farhani Zarmani  
(UiTM, Malaysia)

Azizah Mohd Ridh  
(IUIUM, Malaysia)

Muhammad Abdurrahman Sadiq  
(IUIUM, Malaysia)

Nusrah Samat  
(MSU, Malaysia)

Badruddin Ibrahim  
(IUIUM, Malaysia)

Muhammad Adli Musa  
(IUIUM, Malaysia)

Rafidah Mohamad Cusairi  
(UUUM, Malaysia)

Chemah Tamby Chik  
(UiTM, Malaysia)

Muhammad Ridhwan Ridh  
(UUSM, Malaysia)

Raihanah Azahari  
(UUM, Malaysia)

Dasimah Omar  
(UiTM, Malaysia)

Mushera Ambras Khan  
(IUIUM, Malaysia)

Roslina Che Soh  
(IUIUM, Malaysia)

Fadilah Abd Rahman  
(UiTM, Malaysia)

Nooritawati Tahir  
(UUTM, Malaysia)

Sahilah Abd. Mutilib  
(UUKM, Malaysia)

Hanudin Amin  
(UUM, Malaysia)

Nor Zafir Md Salleh  
(UUTM, Malaysia)

Shadiyah Abdul Shukur  
(UUSM, Malaysia)

Irwan Mohd Subri  
(UUSM, Malaysia)

Nora Abdul Hak  
(IUIUM, Malaysia)

Sharifah Faigh Syeid Alwi  
(UUTM, Malaysia)

Ismail Ahmad  
(UUUM, Malaysia)

Nor‘ain Othman  
(UUTM, Malaysia)

Ummi Salwa Ahmad Bustamam  
(UUSM, Malaysia)

Jamal Abdul Nassir Shaari  
(UUSM, Malaysia)

Noraini Md Hashim  
(IUIUM, Malaysia)

Yasmin Hanani Mohd Safina  
(UUSM, Malaysia)

Mohamed Azam  
(JAIS, Malaysia)

Norizah Aripin  
(IUIUM, Malaysia)

Zuliza Mohd Kusrin  
(UUKM, 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 nayan@upm.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.
Please read the Pertanika guidelines and follow these instructions carefully. Manuscripts not adhering to the instructions will be returned for revision without review. The Chief Executive Editor reserves the right to return manuscripts that are not prepared in accordance with these guidelines.

MANUSCRIPT PREPARATION

Manuscript Types

Pertanika accepts submission of mainly four types of manuscripts for peer-review.

1. **Regular article**
   
   Regular articles are full-length original empirical investigations, consisting of introduction, materials and methods, results and discussion, conclusions. Original work must provide references and an explanation on research findings that contain new and significant findings.

   **Size:** Generally, these are expected to be between 6 and 12 journal pages (excluding the abstract, references, tables and/or figures), a maximum of 80 references, and an abstract of 100–200 words.

2. **Review article**
   
   These report critical evaluation of materials about current research that has already been published by organizing, integrating, and evaluating previously published materials. It summarizes the status of knowledge and outline future directions of research within the journal scope. Review articles should aim to provide systemic overviews, evaluations and interpretations of research in a given field. Re-analyses as meta-analysis and systemic reviews are encouraged. The manuscript title must start with “Review Article:”.

   **Size:** These articles do not have an expected page limit or maximum number of references, should include appropriate figures and/or tables, and an abstract of 100–200 words. Ideally, a review article should be of 7 to 8 printed pages.

3. **Short communications**
   
   They are timely, peer-reviewed and brief. These are suitable for the publication of significant technical advances and may be used to:

   (a) report new developments, significant advances and novel aspects of experimental and theoretical methods and techniques which are relevant for scientific investigations within the journal scope;

   (b) report/discuss on significant matters of policy and perspective related to the science of the journal, including ‘personal’ commentary;

   (c) disseminate information and data on topical events of significant scientific and/or social interest within the scope of the journal.

   The manuscript title must start with “Brief Communication:”.

   **Size:** These are usually between 2 and 4 journal pages and have a maximum of three figures and/or tables, from 8 to 20 references, and an abstract length not exceeding 100 words. Information must be in short but complete form and it is not intended to publish preliminary results or to be a reduced version of Regular or Rapid Papers.
4. Others

Brief reports, case studies, comments, concept papers, Letters to the Editor, and replies on previously published articles may be considered.

PLEASE NOTE: NO EXCEPTIONS WILL BE MADE FOR PAGE LENGTH.

Language Accuracy

Pertanika emphasizes on the linguistic accuracy of every manuscript published. Articles must be in English and they must be competently written and argued in clear and concise grammatical English. Contributors are strongly advised to have the manuscript checked by a colleague with ample experience in writing English manuscripts or a competent English language editor.

Author(s) must provide a certificate confirming that their manuscripts have been adequately edited. A proof from a recognised editing service should be submitted together with the cover letter at the time of submitting a manuscript to Pertanika. All editing costs must be borne by the author(s). This step, taken by authors before submission, will greatly facilitate reviewing, and thus publication if the content is acceptable.

Linguistically hopeless manuscripts will be rejected straightaway (e.g., when the language is so poor that one cannot be sure of what the authors really mean). This process, taken by authors before submission, will greatly facilitate reviewing, and thus publication if the content is acceptable.

MANUSCRIPT FORMAT

The paper should be submitted in one column format with at least 4cm margins and 1.5 line spacing throughout. Authors are advised to use Times New Roman 12-point font and MS Word format.

1. Manuscript Structure

Manuscripts in general should be organised in the following order:

Page 1: Running title
This page should only contain the running title of your paper. The running title is an abbreviated title used as the running head on every page of the manuscript. The running title should not exceed 60 characters, counting letters and spaces.

Page 2: Author(s) and Corresponding author information
This page should contain the full title of your paper not exceeding 25 words, with name(s) of all the authors, institutions and corresponding author’s name, institution and full address (Street address, telephone number (including extension), hand phone number, and e-mail address) for editorial correspondence. First and corresponding authors must be clearly indicated.

The names of the authors may be abbreviated following the international naming convention. e.g. Salleh, A.B.\textsuperscript{1}, Tan, S.G\textsuperscript{2}*, and Sapuan, S.M\textsuperscript{3}.

Authors’ addresses. Multiple authors with different addresses must indicate their respective addresses separately by superscript numbers:

George Swan\textsuperscript{1} and Nayan Kanwal\textsuperscript{2}
\textsuperscript{1}Department of Biology, Faculty of Science, Duke University, Durham, North Carolina, USA.,
\textsuperscript{2}Office of the Deputy Vice Chancellor (R&I), Universiti Putra Malaysia, Serdang, Malaysia.

A list of number of black and white / colour figures and tables should also be indicated on this page. Figures submitted in color will be printed in colour. See "5. Figures & Photographs" for details.

Page 3: Abstract
This page should repeat the full title of your paper with only the Abstract (the abstract should be less than 250 words for a Regular Paper and up to 100 words for a Short Communication), and Keywords.

Keywords: Not more than eight keywords in alphabetical order must be provided to describe the contents of the manuscript.
Page 4: Introduction
This page should begin with the Introduction of your article and followed by the rest of your paper.

2. Text
Regular Papers should be prepared with the headings Introduction, Materials and Methods, Results and Discussion, Conclusions, Acknowledgements, References, and Supplementary data (if available) in this order.

3. Equations and Formulae
These must be set up clearly and should be typed double spaced. Numbers identifying equations should be in square brackets and placed on the right margin of the text.

4. Tables
All tables should be prepared in a form consistent with recent issues of Pertanika and should be numbered consecutively with Roman numerals. Explanatory material should be given in the table legends and footnotes. Each table should be prepared on a new page, embedded in the manuscript.

When a manuscript is submitted for publication, tables must also be submitted separately as data - .doc, .rtf, Excel or PowerPoint files- because tables submitted as image data cannot be edited for publication and are usually in low-resolution.

5. Figures & Photographs
Submit an original figure or photograph. Line drawings must be clear, with high black and white contrast. Each figure or photograph should be prepared on a new page, embedded in the manuscript for reviewing to keep the file of the manuscript under 5 MB. These should be numbered consecutively with Roman numerals.

Figures or photographs must also be submitted separately as TIFF, JPEG, or Excel files- because figures or photographs submitted in low-resolution embedded in the manuscript cannot be accepted for publication. For electronic figures, create your figures using applications that are capable of preparing high resolution TIFF files. In general, we require 300 dpi or higher resolution for coloured and half-tone artwork, and 1200 dpi or higher for line drawings are required.

Failure to comply with these specifications will require new figures and delay in publication.

NOTE: Illustrations may be produced in colour at no extra cost at the discretion of the Publisher; the author could be charged Malaysian Ringgit 50 for each colour page.

6. References
References begin on their own page and are listed in alphabetical order by the first author’s last name. Only references cited within the text should be included. All references should be in 12-point font and double-spaced.

NOTE: When formatting your references, please follow the APA reference style (6th Edition). Ensure that the references are strictly in the journal’s prescribed style, failing which your article will not be accepted for peer-review. You may refer to the Publication Manual of the American Psychological Association for further details (http://www.apastyle.org/).
7. General Guidelines

**Abbreviations:** Define alphabetically, other than abbreviations that can be used without definition. Words or phrases that are abbreviated in the introduction and following text should be written out in full the first time that they appear in the text, with each abbreviated form in parenthesis. Include the common name or scientific name, or both, of animal and plant materials.

**Acknowledgements:** Individuals and entities that have provided essential support such as research grants and fellowships and other sources of funding should be acknowledged. Contributions that do not involve researching (clerical assistance or personal acknowledgements) should not appear in acknowledgements.

**Authors’ Affiliation:** The primary affiliation for each author should be the institution where the majority of their work was done. If an author has subsequently moved to another institution, the current address may also be stated in the footer.

**Co-Authors:** The commonly accepted guideline for authorship is that one must have substantially contributed to the development of the paper and share accountability for the results. Researchers should decide who will be an author and what order they will be listed depending upon their order of importance to the study. Other contributions should be cited in the manuscript’s Acknowledgements.

**Copyright Permissions:** Authors should seek necessary permissions for quotations, artwork, boxes or tables taken from other publications or from other freely available sources on the Internet before submission to Pertanika. Acknowledgement must be given to the original source in the illustration legend, in a table footnote, or at the end of the quotation.

**Footnotes:** Current addresses of authors if different from heading may be inserted here.

**Page Numbering:** Every page of the manuscript, including the title page, references, tables, etc. should be numbered.

**Spelling:** The journal uses American or British spelling and authors may follow the latest edition of the Oxford Advanced Learner’s Dictionary for British spellings.

---

**SUBMISSION OF MANUSCRIPTS**

Owing to the volume of manuscripts we receive, we must insist that all submissions be made electronically using the online submission system ScholarOne™, a web-based portal by Thomson Reuters. For more information, go to our web page and click “Online Submission”.

**Submission Checklist**

1. **MANUSCRIPT:** Ensure your MS has followed the Pertanika style particularly the first four pages as explained earlier. The article should be written in a good academic style and provide an accurate and succinct description of the contents ensuring that grammar and spelling errors have been corrected before submission. It should also not exceed the suggested length.

2. **COVER LETTER:** All submissions must be accompanied by a cover letter detailing what you are submitting. Papers are accepted for publication in the journal on the understanding that the article is original and the content has not been published either in English or any other language(s) or submitted for publication elsewhere. The letter should also briefly describe the research you are reporting, why it is important, and why you think the readers of the journal would be interested in it. The cover letter must also contain an acknowledgement that all authors have contributed significantly, and that all authors have approved the paper for release and are in agreement with its content.

   The cover letter of the paper should contain (i) the title; (ii) the full names of the authors; (iii) the addresses of the institutions at which the work was carried out together with (iv) the full postal and email address, plus telephone numbers and emails of all the authors. The current address of any author, if different from that where the work was carried out, should be supplied in a footnote.

   The above must be stated in the cover letter. Submission of your manuscript will not be accepted until a cover letter has been received.
2. **COPYRIGHT**: Authors publishing the Journal will be asked to sign a copyright form. In signing the form, it is assumed that authors have obtained permission to use any copyrighted or previously published material. All authors must read and agree to the conditions outlined in the form, and must sign the form or agree that the corresponding author can sign on their behalf. Articles cannot be published until a signed form (*original pen-to-paper signature*) has been received.

Please do **not** submit manuscripts to the editor-in-chief or to any other office directly. Any queries must be directed to the **Chief Executive Editor**’s office via email to nayan@upm.my.


**HARDCOPIES OF THE JOURNALS AND OFF PRINTS**

Under the Journal’s open access initiative, authors can choose to download free material (via PDF link) from any of the journal issues from Pertanika's website. Under “**Browse Journals**” you will see a link, “**Current Issues**” or “**Archives**”. Here you will get access to all current and back-issues from 1978 onwards.

The **corresponding author** for all articles will receive one complimentary hardcopy of the journal in which his/her articles is published. In addition, 20 off prints of the full text of their article will also be provided. Additional copies of the journals may be purchased by writing to the Chief Executive Editor.
Why should you publish in Pertanika?

BENEFITS TO AUTHORS

PROFILE: Our journals are circulated in large numbers all over Malaysia, and beyond in Southeast Asia. Our circulation covers other overseas countries as well. We ensure that your work reaches the widest possible audience in print and online, through our wide publicities campaigns held frequently, and through our constantly developing electronic initiatives such as Web of Science Author Connect backed by Thomson Reuters.

QUALITY: Our journals’ reputation for quality is unsurpassed ensuring that the originality, authority and accuracy of your work are fully recognised. Each manuscript submitted to Pertanika undergoes a rigid originality check. Our double-blind peer refereeing procedures are fair and open, and we aim to help authors develop and improve their scientific work. Pertanika is now over 38 years old; this accumulated knowledge has resulted in our journals being indexed in SCOPUS (Elsevier), Thomson ISI Web of Science™ Core Collection, Emerging Sources Citation Index (ESCI), Web of Knowledge (BIOSIS & CAB Abstracts), EBSCO, DOAJ, ERA, AGRICOLA, Google Scholar, ISC, TIB, Journal Guide, Citefactor, Cabell’s Directories and MyCite.

AUTHOR SERVICES: We provide a rapid response service to all our authors, with dedicated support staff for each journal, and a point of contact throughout the refereeing and production processes. Our aim is to ensure that the production process is as smooth as possible, is borne out by the high number of authors who prefer to publish with us.

CODE OF ETHICS: Our Journal has adopted a Code of Ethics to ensure that its commitment to integrity is recognized and adhered to by contributors, editors and reviewers. It warns against plagiarism and self-plagiarism, and provides guidelines on authorship, copyright and submission, among others.

PRESS RELEASES: Landmark academic papers that are published in Pertanika journals are converted into press-releases as a unique strategy for increasing visibility of the journal as well as to make major findings accessible to non-specialist readers. These press releases are then featured in the university’s UK and Australian based research portal, ResearchSEA, for the perusal of journalists all over the world.

LAG TIME: The elapsed time from submission to publication for the articles averages 3 to 4 months. A decision on acceptance of a manuscript is reached in 3 to 4 months (average 14 weeks).

Address your submissions to:
The Chief Executive Editor
Tel: +603 8947 1622
navan@upm.my

Journal's Profile: www.pertanika.upm.edu.my/

Call for Papers 2017-18
now accepting submissions...

Pertanika invites you to explore frontiers from all key areas of agriculture, science and technology to social sciences and humanities.

Original research and review articles are invited from scholars, scientists, professors, post-docs, and university students who are seeking publishing opportunities for their research papers through the Journal’s three titles: JTAS, JST & JSSH. Preference is given to the work on leading and innovative research approaches.

Pertanika is a fast track peer-reviewed and open-access academic journal published by Universiti Putra Malaysia. To date, Pertanika Journals have been indexed by many important databases. Authors may contribute their scientific work by publishing in UPM’s hallmark SCOPUS & ISI indexed journals.

Our journals are open access - international journals. Researchers worldwide will have full access to all the articles published online and be able to download them with zero subscription fee.

Pertanika uses online article submission, review and tracking system for quality and quick review processing backed by Thomson Reuters’ ScholarOne™. Journals provide rapid publication of research articles through this system.

For details on the Guide to Online Submissions, please visit http://www.pertanika.upm.edu.my/guide_online_submission.php

About the Journal

Pertanika is an international multidisciplinary peer-reviewed leading journal in Malaysia which began publication in 1978. The journal publishes in three different areas — Journal of Tropical Agricultural Science (JTAS); Journal of Science and Technology (JST); and Journal of Social Sciences and Humanities (JSSH). All journals are published in English.

JTAS is devoted to the publication of original papers that serves as a forum for practical approaches to improving quality in issues pertaining to tropical agricultural research- or related fields of study. It is published four times a year in February, May, August and November.

JST caters for science and engineering research- or related fields of study. It is published twice a year in January and July.

JSSH deals in research or theories in social sciences and humanities research. It aims to develop as a flagship journal with a focus on emerging issues pertaining to the social and behavioural sciences as well as the humanities, particularly in the Asia Pacific region. It is published four times a year in March, June, September and December.

An Award-winning International-Malaysian Journal
--- CREAM AWARD, MoHE ---Sept 2015
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Role of <em>Ar-Rahnu</em>’s Benefits – Sacrifices Exchange towards Relationships between Customers and Islamic Financial Institutions</td>
<td>127</td>
</tr>
<tr>
<td>Rafidah Mohd Azli, Mohd Rizal Palil, Shifa Mohd Nor, Mohamad Abdul Hamid and Zainudin Awang</td>
<td></td>
</tr>
<tr>
<td>Relationship between Knowledge, Attitude, and Religiosity with the Intention to Provide Halal Maintenance among Muslim Fathers in Malaysia</td>
<td>141</td>
</tr>
<tr>
<td>Sa’odah Ahmad, Rojanah Kahar and Muslihah Hasbullah</td>
<td></td>
</tr>
<tr>
<td>Buying Halal Pharmaceutical Products: Do Consumers Have Imperfect Knowledge?</td>
<td>153</td>
</tr>
<tr>
<td>Nur Famiza, A., Nor Samsinar, K., Kursimah, H. and Radin Firdaus, R. B.</td>
<td></td>
</tr>
<tr>
<td>Applying the Fuzzy Delphi Method (FDM) to Analyze the Expert Consensus Values for Instrument of Shariah-Compliant Gold Investment</td>
<td>165</td>
</tr>
<tr>
<td>Najahudin Lateh, Salmy Edawati Yaacob and Siti Noobiah Md Rejab</td>
<td></td>
</tr>
<tr>
<td>Consumers’ Perception of Islamic Credit Cards: An Exploratory Study</td>
<td>179</td>
</tr>
<tr>
<td>Regulating Polygamous Marriage to Prevent its Abuse: A Case Study of Malaysia</td>
<td>197</td>
</tr>
<tr>
<td>Rafeah, S., Hanifah, M. F. H., Zakiah, S., Fadhilah Adibah, I. and Nur Zahidah, H. J.</td>
<td></td>
</tr>
<tr>
<td>Merging the Research on Halal Concept Using Humanoids for Patient with Brain-Impairment: Its Maqasid and Principles</td>
<td>209</td>
</tr>
<tr>
<td>Siti Fatahiyah, M. and Hanapiah, F. A.</td>
<td></td>
</tr>
<tr>
<td>Judicial Approaches in Custodial Cases Relating to <em>Mumayyiz</em> Children</td>
<td>217</td>
</tr>
<tr>
<td>Hashim, N. H., Ngatiman, S., Sahari, N. H. and Alias, B.</td>
<td></td>
</tr>
<tr>
<td>Studies on Technology and Halal Food Security: A Review</td>
<td>225</td>
</tr>
<tr>
<td>Nur Syahidah Jalil, Azah Anir Norman and Suraya Hamid</td>
<td></td>
</tr>
<tr>
<td>Spousal Contribution and Fair Division of Matrimonial Assets: A Case Study of Malaysian Muslims</td>
<td>241</td>
</tr>
<tr>
<td>Noorul Huda, S., Najibah, M. Z. and Siti Khadijah, A. M.</td>
<td></td>
</tr>
</tbody>
</table>
Contents

Bridging Academic & Global Halal Industry
Maslahah Approach in Halal-Logistics Operation
Hanifah, M. F. H., Rafeah, S., Zakiah, S., Zulaipa, R. and Munirah, A.

Industry Need for Educators in Shariah Compliant Financial Services
Siti Khadijah, A. M. and Ezani, Y.

Supplier Management in Halal Food Supply Chain: A Preliminary Case Study
Tatsuya Fujiwara

Al-Talfiq as an Innovative Solution for Primary Fiqh Issues in Halal Supply Chain Operations
Mohd Dasuqkhi Mohd Sirajuddin, Muhamed Rahimi Osman, Harlina Suzana Jaafar and Mohd Yakub@Yusoff

Halal Culinary Tracking Application at Food Souvenirs Center Based on Analytical Hierarchy Process (AHP) Method
Sucipto Sucipto, Mas’ud Effendi, Mochamad Ulul Khilmi, Muhammad Arif Kamal, Aryo Pinandito and Herman Tolle

Review Article on Potentials of Big Data in the Halal Industry

Perceived Value and Satisfaction towards Shariah-Compliant Hotel
Nurul Azhani, M. A., Zainab, K. and Hairul, N. I.

Optimising Malaysian Shariah-Compliant Real Estate Investment Trusts: Perspective of REIT Managers
Nor Nazihah Chuweni, Chris Eves and Andrea Blake

Purchase Intention of Islamic Brand Product among Non-Muslim Customers
Ya, S., Nor, M. M. N., Noor, S. M. and Ahmad, Z.

Element of Swine from the Perspective of Fiqh Ruling and Fatwa in Malaysia
Azri, B., Mohammad Mahyuddin, K., Luqman, A., Mohd Ashrof Zaki, Y., Mohd Dasuqkhi, M. S. and Mohd Solahuddin, S.