Determinants of Consumers' Purchase Behaviour Towards Online Food Delivery Ordering (OFDO)

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ABSTRACT

Nowadays, customers globally are turning to online shopping for almost everything, which is considered a new norm expected to remain indefinitely. Although online food delivery has become a trend, several issues hinder customers from purchasing food online, such as poor customer reviews, trust issues, low food quality, poor packaging, delay in delivery, and risk associated with personal data. Thus, this study aims to identify the effect of reference groups, positive online comments, perceived risks, perceived benefits, and food safety consciousness of online food delivery ordering (OFDO) adoption. The convenience sampling technique was used to collect data from Malaysian consumers. The questionnaire survey data was collected from 288 respondents using the structural equation modelling-partial least squares (SEM-PLS) method. This study shows that reference groups, positive online comments, perceived benefits, and food safety consciousness positively affect the purchase behaviour of online food delivery services. Among all factors, the perceived benefit of online food delivery ordering (OFDO) has the largest effect on consumer behaviour (f^2=0.273). Customers prefer using OFDO due to the application's user-friendly interface, variety of choices, ease of ordering from anywhere and anytime, better discounts, rewards, and cashback.

Keywords: Consumer adoption, consumer behaviour, food safety consciousness, online food delivery ordering, perceived benefit, positive online comments, reference groups

INTRODUCTION

Nowadays, customers globally are turning to online shopping for almost everything, which is considered the new norm and expected to remain indefinitely. In addition, online shopping behaviour continues to increase due to the recent Movement Control Order (MCO). The slogan "Stay at Home" has dramatically changed the lives of Malaysians, especially in how they acquire their daily essentials. As a result, the number of eCommerce consumers in Malaysia has skyrocketed.

Online food delivery has never been as common as it is now, and the trend will undoubtedly continue to grow in 2020 and beyond. Due to lockdown and social distancing measures, consumers increased their online shopping, and with many physical store closures, Malaysia's e-commerce market has accelerated (GlobalData UK Ltd, 2020). According to the National Restaurant Association, approximately 80,000 establishments have temporarily or permanently closed since the pandemic started, down from 110,000 at the pandemic's peak (Vesoulis, 2021).

Therefore, restaurant operators must adopt a technology that allows contactless delivery through online food services to ensure survival and prosperity. By offering this service, restaurant operators can increase revenue, reach more customers, and expand their customer base (See-Kwong et al., 2017). As e-commerce gains popularity, more consumers purchase products or services online. With the new norms of purchasing behaviour and the current situation, business owners need to consider different business strategies, such as adopting an e-commerce approach.

Although online food delivery has become a trend, a few issues were noted hindering customers from purchasing online food, such as poor customer reviews, trust issues, low food quality, poor packaging, delay in delivery, and risk associated with personal data and others (Gupta & Duggal, 2021; Zhao et al., 2017). Moreover, despite the importance and the evolving consumer behaviour towards online food delivery in Malaysia, studies addressing the contributing factors to purchasing online food through delivery services in Malaysia remain inadequate in the extant literature (Chai & Yat, 2019). Most studies on OFDO in Malaysia focused on the intention to purchase rather than consumer behaviour (Pitchay et al., 2021; Shafiee & Wahab, 2021). The study of consumer purchasing behaviour is crucial for marketers because it allows them to understand their customers' expectations. It is beneficial to comprehend what motivates consumers to purchase a product. Thus, by integrating Social Identity Theory (SIT), Perceived Risks and Benefit Model, and food safety consciousness, this study aims to explain customer behaviour towards using OFDO. Specifically, this study examines the effect of reference groups, positive online comments, perceived risks, perceived benefits, and food safety consciousness on consumer behaviour towards online food delivery ordering (OFDO).

This article is structured as follows: A review of past literature and hypotheses

development are presented in the next section. Next, Section 3 presents the research methodology, followed by the results of key findings. Then, the discussion section presents the main conclusion from the findings. After that, the implications of the study are highlighted. Lastly, the limitations and future research suggestions are outlined.

LITERATURE REVIEW

Online Food Delivery Ordering (OFDO)

Even though extensive studies on online buying behaviours and their antecedents have been conducted, the literature focusing on online food delivery ordering is scarce (Yeo et al., 2017). Online food delivery refers to buying food via a website or web applications. The OFDO has been gaining popularity since the global COVID-19 pandemic in early 2020. Customers can place an order online at practically any time and from any location, saving time and resources that would otherwise be spent travelling to pick up a meal. During COVID-19, minimising interaction helps safeguard consumers, staff, and the public from viral propagation. Additionally, OFDO caters to customers' hectic schedules and enables users to securely offer friends, family, and colleagues all types of food. OFDO providers are divided into two categories: the platforms provided by the restaurant owners, such as Kentucky Fried Chicken (KFC), Pizza Hut, McDonald's, and other types of restaurants. The second category is third-party companies providing OFDO platforms, such as FoodPanda, GrabFood, Zomato, UberEats, and GrubHub.

Before 2018, the popular ordering method is through the telephone (Yeo et al., 2017). However, applications for ordering food have recently been deemed more convenient and practical than the telephone because customers can search, retrieve, assess restaurants' ratings, and review them before making payment (Alalwan, 2020).

Social Identity Theory (SIT)

Tajfel and Turner (1979) proposed the social identity theory (SIT) in social psychology. Since then, SIT has been widely applied in consumer behaviour (Belk, 1988) because consumer behaviour is influenced by social surroundings (Bearden & Etzel, 1991). Social identity is a term that refers to how people's self-concepts are shaped by their affiliation with social groupings. According to SIT, engaging in attitudinally consistent behaviours is contingent on perceptions of attitude support from the reference in-group. Individuals who receive normative support from a relevant group are more likely to act in accordance with such attitudes than individuals who do not receive normative support (Johnston & White, 2003).

Reference effects represent the SIT in this study. There has been very limited research conducted on online settings using the SIT. Thus, in this information era, there is an urgent need to examine reference effects on online consumer behaviour, especially towards OFDO (Zhao et al., 2017). The term "reference effects" refers to how reference groups and online comments impact a consumer's online purchase decision (Zhao et al., 2017). There are two

main reasons why reference effects were used in this study. First, consumer behaviour has shifted due to the internet and social media use (Dwivedi et al., 2021). Social media has empowered customers to express their views and feelings online and connect with others. As a result, online comments about previous purchases made on social media influence consumers' purchasing decisions. These shared experiences serve as a source of reference and reliable proof for consumers' own purchasing assessments and decisions, demonstrating the impact of the Internet on consumer behaviour (Zhao et al., 2017).

Second, a reference group is an individual or group of individuals who exert influence over the behaviour of others. Individuals frequently compare themselves to the group and enable the group to help them improve their attitude, knowledge, and behaviour (Hoyer et al., 2001). The reference group in this study refers to friends, family, co-workers, and celebrities with whom consumers make comparisons and imitates their purchase behaviour. Food selection and preference are greatly influenced by social influences (Higgs & Thomas, 2016). Thus, this study used positive online comments and reference groups to represent SIT.

Reference Groups (RGs) and Online Food Delivery Ordering

In this study, reference groups refer to friends, family, co-workers, and celebrities that consumers used for comparisons, of which they imitate the purchase behaviour of these RGs. Through direct encounters,

reference groups are also suggested to be a primary source of personal norms, attitudes, and values (Hsu et al., 2006). It was empirically confirmed and supported by numerous studies on marketing (Ding et al., 2020), medical (Scott, 2021), strategic management (Gómez et al., 2021), and psychology (Dieffenbach et al., 2020).

In terms of food choices, families and friends strongly affect individuals' decisions on food choices. Furthermore, families remain the most crucial reference group since it influences and shapes individuals' values and expectations (Hsu et al., 2006). In addition, education, upbringing, advertisements, press reports, and word-of-mouth also influenced food preferences and acceptability (Verlegh & Candel, 1999). Friends and co-workers influence food preferences because meals are commonly consumed in the presence of others. Due to the growth of social networking and more abundant information, consumers can easily access reference groups, such as celebrities, idols, internet celebrities, and opinion leaders (Ding et al., 2020). Therefore, the following hypothesis is formulated.

H1: Reference groups have a positive effect on consumer behaviour towards OFDO.

Positive Online Comments and Online Food Delivery Ordering

In this digital era, whereby we often use online platforms as a primary medium for communication, online comments are considered a new form of word-of-mouth or e-WOM communication (Zhao et al.,

2017). Online comments are user-generated content (UGC); thus, online comments could potentially influence other purchase decisions (Sethna et al., 2017). According to social norms theory, comments are one of the components that posits others' opinions influence our behaviour; hence, from the perspective of the reasoned action theory, it will influence the purchase behaviour of consumers (Lee & Jin, 2019).

In online businesses, consumers share their experiences through social media and other platforms. The OFDO applications or websites provide a section for the consumers to review food and services. Before making a purchase, consumers usually go through the comments section and evaluate accordingly before making a purchase. Consumers consider online comments more trustworthy than product or service providers' recommendations, whether favourable or unfavourable. They use comments as the primary source of information when making purchasing decisions (Sa'ait et al., 2016). Consumers' behaviour towards a particular product or service is influenced by negative online reviews, especially when the overall set of reviews is negative (Jin & Phua, 2015).

Previous research found that online comments positively affect consumers' purchase intention (Park et al., 2007). Similarly, a study conducted among hotel consumers also perceived that online reviews would affect their hotel booking intentions and perception of trust (Sparks & Browning, 2011). Furthermore, Arif et al. (2020) surveyed Facebook users and found that positive postings related to a particular product will increase consumers' intention to purchase. Likewise, according to Zhang et al. (2017), the depth of online reviews, the strength of the reviews, the richness of the description, and the credit score of the reviewers are factors influencing consumers' buy intent. Therefore, the following hypothesis is formulated.

H2: Positive online comments have a positive effect on consumer behaviour towards OFDO.

Perceived Risks and Benefits Model

Bauer (1960) pioneered the concept of risk and benefit perception in examining consumer purchase behaviour. However, earlier studies have since developed the model frameworks based on consumer perceptions of risk and benefit, which are major determinants of consumers' online or offline purchase decisions (Gassler et al., 2019). Therefore, developing a uniformly acceptable framework for assessing consumers' perception of risks and benefits is critical (Gupta & Duggal, 2021). Thus, a framework of risks and benefits perception is essential to this study to understand consumer behaviour towards OFDO better and clarify the perceived risks and benefits model.

Every purchase decision involves some level of risk due to the various advantages they seek (Kim et al., 2008). Thus, the perceived risks and benefits model is invaluable for analysing why consumers choose a particular product or service. For example, food intake is determined by

perceived risks and benefits, influenced by the outrage associated with the hazards and euphoria associated with the gain (Choi et al., 2013). In this study, both perceived risks and benefits will be used to predict consumer behaviour towards OFDO. In general, perceived risk is the sum of probabilities and uncertainty in a buying choice and the repercussions of choosing an unfavourable action; a perceived benefit is consumers' belief regarding the extent to which they will benefit from purchasing a product (Kim et al., 2008).

Perceived Risks and Online Food Delivery Ordering

According to Bauer (1960), most consumer purchasing behaviours are risky because buying decisions could have unanticipated or unpleasant outcomes that lead to perceived risks. However, there are no commonly accepted definitions of perceived risks as researchers defined them based on research contexts (Yang et al., 2015). This study conceptualises perceived risks in three dimensions: personal, psychological, and financial, as suggested by Gupta and Duggal (2021).

Considering the nature of OFDO, there are high chances of possibilities of psychological risk, personal risk, and financial risk. Regarding psychological risks, OFDO tends to be late in delivering the food, has hygiene issues, and may not serve as per religious belief. Personal risks include the lack of personal contact, the high cost of devices, and earlier online experiences. Likewise, financial risks may be related to fraud, payment inconvenience, and unreasonable fees (Sinha & Singh, 2014). Moreover, consumers may not be comfortable using OFDO due to the lack of personal touch and connection (Gupta & Duggal, 2021).

Perceived risks negatively influenced consumer behaviour in online shopping (Siyal et al., 2021). Additionally, perceived risk as a multi-dimensional construct directly affects consumer behaviour in using online banking (Kaur & Aurora, 2021). Similarly, Raman and Aashish (2021) found that Indian consumers' perceived risks were an antecedent of consumer behaviour towards mobile payment systems. This study is consistent with a study among the younger generation in Taiwan (Wei et al., 2021). However, there are still limited studies on perceived risks' effect on online food delivery ordering. Most perceived risk-technology adoption studies focused on online shopping in general and online banking. Recently, Gupta and Duggal (2021) found that Indian consumers' usage of OFDO was influenced by perceived risk. Similarly, a study on OFDO among consumers in India found that the perceived risk of acquiring a particular disease and fear negatively influenced their purchasing frequency through OFDO (Mehrolia et al., 2021). In the same vein, a recent study found that perceived risk negatively affects the intention to purchase through OFDO in New York (Leung & Cai, 2021). Hence, the following hypothesis is proposed:

H3: Perceived risk has a negative effect on the consumers' behaviour towards OFDO.

Perceived Benefits and Online Food Delivery Ordering

Constructing a framework that includes risk and benefit perceptions is critical to gaining more profound knowledge about consumer behaviour towards using OFDO (Gupta & Sajnani, 2020). The term 'perceived benefits' refers to the anticipated benefits that OFDO provides consumers. In this study, the benefit of values and convenience are the two dimensions of perceived benefit, as suggested by Gupta and Duggal (2021). The most apparent benefit of OFDO is that it saves time and effort, as going out to buy food or home-cooking takes time and costs more money (Punj, 2012). Hence, OFDO is a prevalent choice worldwide due to its time-saving features, ease of ordering, and accessibility from anywhere (Kimes, 2011; Wang et al., 2020).

Furthermore, consumers could leisurely explore product information in terms of time and location, enjoy a limitless selection of restaurants, and easily compare costs. In terms of value benefit, OFDO has better value for money because it offers better discounts, rewards, and cashback. Additionally, OFDO provides the flexibility of an online payment gateway and the option of product customisation, which are deemed advantages for individuals who prefer cashless transactions and product personalisation (Gupta & Sajnani, 2020). On the other hand, Mehrolia et al. (2021) suggested that consumers who perceive OFDO has not so much benefit will order food through online food delivery less frequently. Generally, people staying at home during the COVID-19 pandemic are inclined to adopt OFDO to protect themselves against the virus and save money on travel expenses.

OFDO has played an unprecedented role during the outbreak of the COVID-19, thus benefiting not only consumers but also other stakeholders, restaurants operator, app providers, and others. The pandemic and government measures have greatly impacted people's daily lives, influencing or changing consumers' behaviour. Thus, consumers opted for OFDO because of its numerous benefits, especially in this new norm situation (Leung & Cai, 2021). Due to consumer behaviour changes with the new norm, especially towards using e-commerce, it is crucial to study the effects of perceived benefits in emerging economies such as Malaysia. Although OFDO is widely used in Malaysia, research on the perceived benefits' effect on OFDO consumer behaviour is limited. Therefore, the following hypothesis is formulated:

> H4: Perceived benefits have a positive effect on consumer behaviour towards OFDO.

Food Safety Consciousness and Online Food Delivery Ordering

Food safety is the most crucial consideration when dealing with food, especially during this pandemic. People are afraid of contracting the virus; thus, the consumer decisions on buying food are strongly influenced by their food safety consciousness. In this study, food safety consciousness relates to how well consumers understand the

current state of food safety and how much importance they place on it (Zhao et al., 2017). However, empirical evidence of food safety related to OFDO is limited.

Previous studies found that food safety assurance strongly affects OFDO, enhancing consumers' trust in OFDO (Xiao et al., 2015). Furthermore, there is evidence from the recent study on OFDO that the safety measures adopted by restaurants and delivery services will help maintain their customer base, hence, securing consumers' loyalty (Dsouza & Sharma, 2020). As OFDO products are highly perishable food items with a typically short shelf life, food safety becomes a top priority in purchasing food and beverages. As Malaysia is the home of Southeast Asian cuisine, food safety has become a great concern among health authorities in Malaysia due to its profound impact. Since halal food premises are widely in demand in this country due to its larger Muslim population, food operators must follow strict rules and regulations to get a halal certificate. Among the requirements is to fulfil the food safety requirement, hygiene, and cleanliness standards. Therefore, the following hypothesis is formulated.

H5: Consumers' food safety consciousness (FSC) has a positive effect on consumer behaviour towards OFDO.

Figure 1 illustrates the conceptual framework and the associated hypotheses based on the literature discussed.

METHOD

Data Collection Procedure

Data were collected for two months from Malaysia's urban population in all thirteen states and three federal territories. The urban population was selected since they have a better internet connection and the OFDO application is only available in a particular area in Malaysia, namely the urban area. Initially, a pretesting of the
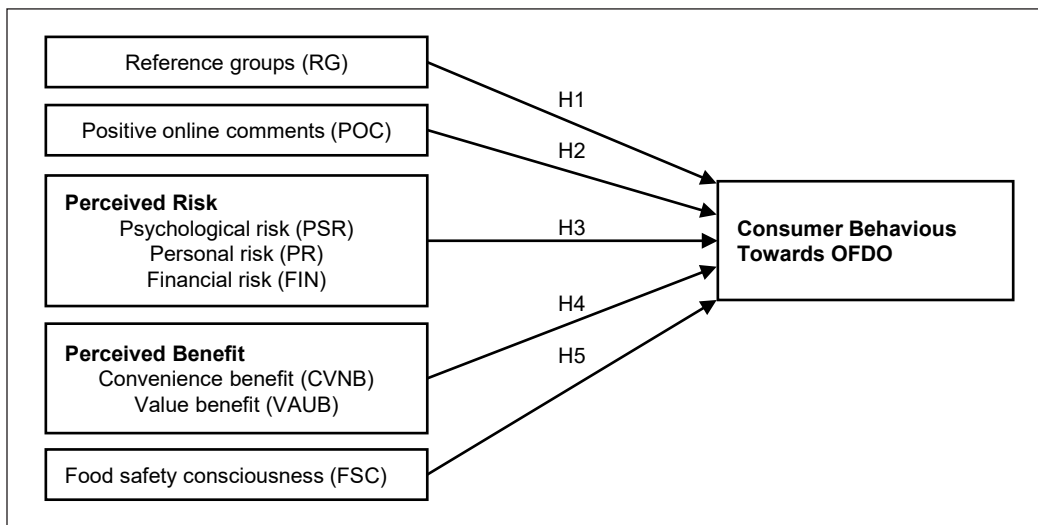

Figure 1: Conceptual framework

instrument was conducted before the actual data collection. The cognitive interviewing strategy was used, whereby fifteen responses were collected. Cognitive interviewing is a method for scientifically studying how people think about and respond to survey questionnaires. It was conducted to understand better how respondents reply to survey questions. The pretesting method allows the researcher to modify and improve the questionnaire to be more precise and easier to complete (Lavrakas, 2008). Based on the interview, no major modification was required for the questionnaire. The comments were more on the grammar, layout, and font size. Overall, respondents could easily understand the questionnaire. After minor modification, a larger sample of 339 responses was received from the target population, out of which seven responses were excluded from the analysis due to straight-lining, and 44 responses did not have experience using OFDO. Therefore, 288 responses that were found to be completed and usable were used in the final data analysis.

Sample Size and Respondent Profile

The sample of this study was Malaysian consumers aged 18 years and above. Since the sampling frame is not available, this study uses G*Power ($f2$ =0.15, power= 0.95, Alpha=0.05 and predictors= 5) for minimum sample size determination. The results from G*Power 3.1.9.7 software indicate that this study requires a 138 minimum sample size. Using power analysis for sample size computation was recommended in recent

publications (Hair et al., 2014, 2017; Ringle et al., 2020). The sampling technique used was convenience sampling. In order to ensure the adequacy of the sample and a better response rate, 500 questionnaires were distributed using an online survey. After a few follow-ups, only 339 respondents answered the survey through the online platform. However, after screening, only 288 respondents fulfilled the requirement, whereby only consumers with experience in using OFDO qualified for this research on consumer behaviour.

Most respondents are female (66%) and belonged to the age group of 19–25 years (45.1%). Graduated respondents (diploma or bachelor's degree) are the highest group (65.6%). In terms of OFDO frequency, most respondents used OFDO once or twice a month (41.7%), followed by a few times a week (24.7%). Most respondents have been using OFDO for more than 24 months (27.1%). Appendix 1 presents the demographics of the respondents.

Measurement

The questionnaire used for this research was adopted from previous research and consisted of four sections. The first section asked one screening question, whether the participants have prior OFDO experience. The second section comprised respondents' demographic profiles, while the third section was about the frequency of using OFDO and the duration of OFDO usage, as suggested by Ali et al. (2021). The last section comprised questions regarding all items in the conceptual framework, as

shown in Appendix 2. The study adapted all measurement items from previous literature, which were modified to fit this study context. The perceived risks and benefits of OFDO were measured by the items adapted and modified from Gupta and Duggal (2021). Reference groups, positive online comments, and food safety consciousness of OFDO were measured via the items borrowed from Zhao et al. (2017). For the dependent variable (consumer behaviour), the three items were adapted from Yadav and Pathak (2017). This study used a five-point Likert-type scale from "strongly disagree" (1) to "strongly agree" (5) for the measurement.

Statistical Data Analysis

The research model and hypotheses were examined using the partial least squares structural equation modelling (PLS-SEM) approach. The data was analysed using SmartPLS 3.3.3 software in a three-step PLS-SEM method. First, the outer (measurement) model was used to test the reliability and validity of all constructs for the reflective construct. Next, the second assessment is for the formative measures (second-order construct). The second step was conducted after the assessment of the reflective measurement was completed and found to be satisfactory. The assessment of formative measures consists of collinearity (Variance Inflation Factor [VIF]) and weight and significance (outer weight significance [Bootstrap]). In this study, the perceived risks (three dimensions) and perceived benefits (two dimensions) are modelled as

a Type II (reflective–formative) measure. In the final step or step three, the assessment of the structural model was tested for path coefficient significance (Hair et al., 2017).

The reasons for using the PLS-SEM technique are two-fold. First, the model in this study incorporates structural models with reflective and formative measurement models that can be easily included in PLS-SEM. Second, since the results revealed that the data in this study was not multivariate normal, a non-parametric analytic programme using SmartPLS is more suitable than Multiple Regression Analysis using SPSS Statistics.

Data normality was measured using multivariate skewness and kurtosis as suggested by Hair et al. (2017) and Cain et al. (2017). The results revealed that the data obtained were not multivariate normal, Mardia's multivariate skewness (β=9.930, p<0.01) and Mardia's multivariate kurtosis (β=85.404, p< 0.01).

RESULTS

First Step: Measurement Assessment of the Reflective Measurement Model (First-Order Construct)

First, the measurement model was performed to test the validity and reliability of the instruments using the guidelines by Hair et al. (2019) and Ramayah et al. (2018). The loadings, average variance extracted (AVE), and the composite reliability (CR) were assessed for the measurement model. The loadings' values should be ≥0.5, the AVE should be ≥0.5, and the CR should be ≥0.7. As shown in Appendix 3, both AVE

values are higher than 0.5, and all CR values are higher than 0.7. The loadings were also acceptable, with only seven loadings scoring less than 0.708 (Hair et al., 2019). A universally accepted norm for Cronbach Alpha (α) value is a score of 0.6-0.7, which indicates an acceptable degree of reliability, and a score of 0.8 or higher indicates a very good level. However, numbers greater than 0.95 are not always desirable because they may indicate redundancy (Hulin et al., 2001). In this study, all constructs are in the range of 0.647 to 0.878, and all are acceptable. Three items were deleted due to loadings' values below ≥0.5.

Next, the discriminant validity was assessed using the HTMT criterion, as suggested by Henseler et al. (2015) and updated by Franke and Sarstedt (2019). The HTMT values should be ≤0.85, and the stricter and lenient mode criterion should be ≤0.90. As shown in Table 1, all values of HTMT were lower than the stricter criterion of ≤0.85. As a result, it can be concluded that the respondents were aware of the distinctions between the six variables. Thus, both validity tests reveal that the measuring items are valid and reliable.

Second Step: Assessment of Formative Measures (Second-Order Construct)

The formative measures were assessed once the reflective measurement was completed and judged to be satisfactory. One of the main reasons for including the second-order construct in research is to reduce the number of interactions in the structural model, making the PLS path model more parsimonious and easier to grasp (Hair et al., 2014). Therefore, in this study, perceived risks (three dimensions and perceived benefits (two dimensions) are modelled as Type II: Reflective-Formative High Order Construct.

First, for Collinearity or Variance Inflation Factor (VIF), there is no collinearity issue in the VIF assessment of this study since all the VIF values are below 5.0 (Hair et al. 2014). Second, for weight and significance, as presented in Appendix 4, the significance and relevance of the outer weights of the formative constructs are examined. The results show that only three indicators were significant, and two were insignificant. However, an insignificant indicator can still be retained based on content validity (Hair et al., 2013).

Table 1
Discriminant validity (HTMT)

	Benefit	**FSC**	**PB**	**POC**	**RG**	**Risk**
Benefit						
FSC	0.270					
PB	0.604	0.301				
POC	0.325	0.367	0.067			
RG	0.303	0.324	0.227	0.539		
Risk	0.210	0.174	0.220	0.150	0.227	

Third Step: Assessment of the Structural Model (Hypotheses Testing)

Table 2 summarises the criteria to assess the proposed hypotheses. The effect of the five predictors on consumer behaviour, R^2, was 0.280 (Q^2 = 0.186), which suggests all five predictors explained 28.0% of the variance in consumer behaviour towards OFDO. Reference Groups (β=0.112, p<0.05), Positive Online Comments (β=0.183, p< 0.05), Perceived Benefits (β=0.476, p< 0.01) and Food Safety Consciousness (β=0.153, p< 0.05) are all positively related to consumer behaviour towards OFDO; thus, H1, H2, H4, and H4 are supported. Contrary to the expectation, Perceived Risks (β=0.095, p>0.05) do not affect consumer behaviour.

DISCUSSION

As theorised, for H1, reference groups have a positive effect on consumer behaviour towards OFDO. Indeed, friends, families, co-workers, and celebrities influenced consumer behaviours towards OFDO. This finding is consistent with Ding et al. (2020) and represents the collectivistic society of Malaysians, manifested in the long-term devotion toward "members" of a group. Thus, when consumers observed reference groups used OFDO, they would be more inclined to use OFDO.

Similarly, H2 positive online comments influenced consumer behaviours towards OFDO, which is also supported. The finding corroborates with Social Identity Theory that people's self-concepts are shaped by their affiliation with social groupings. Furthermore, as most respondents are young consumers, the data revealed that their decisions are easily influenced by online recommendations and positive comments on social media (Tan et al., 2014). This finding is consistent with other studies, such as Arif et al. (2020), Park et al. (2007), Sparks and Browning (2011), and Zhang et al. (2017).

However, based on the result, H3 is not supported. First, perceived risks do not affect consumer behaviours towards OFDO. It may be because the OFDO system is widely used and well-established. Thus, minimum risks are involved, and online payments are more trustworthy (Li et al., 2020). Besides, psychological, financial, and personal risks are no longer an issue with the new norms. Additionally, consumers' risks

Table 2
Hypotheses testing

Relationship	Std Beta	Std Dev	t-value	p-value	BCI LL	BCI UL	f^2	Hypotheses Results
H1: RG -> PB	0.112	0.058	1.924	0.027	0.014	0.199	0.013	Supported
H2: POC -> PB	0.183	0.090	2.028	0.021	0.076	0.359	0.034	Supported
H3: Risk -> PB	0.095	0.071	1.336	0.091	-0.080	0.173	0.012	Not Supported
H4: Benefit -> PB	0.476	0.050	9.472	p< .001	0.396	0.559	0.273	Supported
H5: FSC -> PB	0.153	0.063	2.444	0.007	0.060	0.264	0.027	Supported

are not a significant concern with customers' experience and knowledge of using OFDO. Another reason for the insignificant result is that the benefits of OFDO outweigh its risks.

Interestingly, in this study, perceived benefits have the largest effect on consumer behaviour towards OFDO. Thus, H4 is supported. Convenience and value benefit are the two dimensions of perceived benefit that strongly influence consumer behaviour. Undoubtedly, consumers use OFDO due to its benefits, such as the time-saving features, ease of ordering, and accessibility from anywhere, offering better discounts, rewards, and cashback. Furthermore, with the social distancing advice and work from home approach since March 2020 and the movement control order by the Malaysian government, dine-in is still restricted. Therefore, OFDO is the most practical solution to the current situation to suppress the COVID-19 virus proliferation. This finding is consistent with the previous research by Leung and Cai (2021) and Mehrolia et al. (2021).

Finally, the researchers discovered that consumers' food safety consciousness has a positive effect on consumer behaviour, and as such, H5 is supported. This outcome agrees with Dsouza and Sharma (2020). Furthermore, since most respondents in this study are highly educated, they have better food safety knowledge and exhibit high demand for food safety, which indicates the positive effect of food safety consciousness on consumer behaviour towards OFDO.

THEORETICAL, MANAGERIAL, METHODOLOGICAL, AND SOCIAL IMPLICATIONS

In terms of the theoretical perspectives, this research's findings enhance the existing literature as follows: first, the contribution of this research can be seen through the incorporation of the two theories from previous research, which are Social Identity Theory and Perceived Risk and Benefits Model. Few studies combine these two theories to determine consumer behaviour, especially in the OFDO settings. Zhao et al. (2017) asserted that they were pioneers in defining reference effects in an online setting while broadening and enriching the "social influence" notion by employing reference groups. Additionally, there is an urgent need to examine reference effects on online consumer behaviour in this information era, especially online comments. Similarly, consumers often consider the risks and benefits of various options when it comes to food. Hence, the justification of integrating both theories, Social Identity Theory and the Perceived Risk and Benefits Model, in assessing consumer purchase behaviour towards OFDO. Second, incorporating food safety consciousness into the research framework enriches the theory of online purchase behaviour. The most crucial consideration is food safety, especially in this pandemic era. Third, a fascinating discovery of this study is that the perceived risk of OFDO has no effect on consumer behaviour, which contradicts some of the past research findings on OFDO and other sectors, such as online banking and mobile

payment systems. This discovery may point to the types of technology consumers use. Consumers might not experience risks associated with OFDO.

Next, the study has a few managerial benefits that provide valuable insights for app developers, restaurant operators, and online vendors using OFDO or planning to use the OFDO system. First, the findings from this study revealed that the most important predictor of consumer buying behaviour is the perceived benefits of OFDO. Therefore, app developers, restaurant operators, and online vendors should provide more convenience and benefits, such as a user-friendly app interface, broad choices for food ordering, ease of use, diverse online payment options, value for money, better discounts, and better rewards, and cashback. Second, restaurant operators should intentionally pay attention to online comments. Consumer behaviour towards OFDO is determined by other customers' positive online comments and recommendations. Furthermore, effective measures must be taken immediately to improve the services or products based on the negative comments. Additionally, it is vital to building smooth communication channels with consumers to mitigate the impact of unfavourable comments. Third, restaurant operators and online vendors must always prioritise food safety. Keeping food safe and hygienic is critical for businesses since it prevents the spread of foodborne illnesses and food poisoning. Lastly, the reference group effect, such as family members, friends, co-workers, and celebrities, would greatly affect consumer purchase behaviour. Therefore, restaurant operators should enhance these RGs' effect by ensuring their food quality and engaging celebrities in promoting their business.

Among the methodological implications of this study is adopting the PLS-SEM technique using SmartPLS 3.3.3 due to the non-normality of data. The study assessed perceived risks and benefits modelled as second-order and Type II (reflective-formative). One of the key reasons to add a second-order construct in research, according to Hair et al. (2014), is to reduce the number of relationships in the structural model, making the PLS path model more parsimonious and easier to grasp. This method is replicable by future research. This research is also unique compared to other studies on OFDO, as other studies focused on the intention to purchase. Since OFDO is widely used nowadays, it is more suitable to conduct a study on consumer behaviour rather than their intention. Additionally, both purchase intention and purchase behaviour must carefully select the right respondents; for purchase intention, the respondents should be those who have yet to use OFDO, while for purchase behaviour, the right respondents are those who are using OFDO.

Lastly, in terms of social implications, this study helps better to understand the behaviour of online food delivery consumers. First, this study contributes to helping the food and beverages operators understand consumer behaviour. Second, this study also assists the OFDO app developers and business owners in creating

and enhancing their applications. Third, understanding consumer behaviour will help formulate better marketing strategies, increase customer loyalty, and penetrate a new market. For instance, in this study, the reference groups, positive online comments, perceived benefits, and food safety consciousness positively affect consumer behaviour. Thus, food and beverage operators should put extra effort into ensuring a high quality of service to get positive feedback and comments from consumers and prioritise food safety. Furthermore, owners of the OFDO platforms should provide more benefits, such as rewards and cashback, and ensure safe payment. Indirectly, these efforts would increase the country's income, ensure the sustainability of the food and beverages operators, and offer more employment opportunities. Accordingly, this will safeguard Malaysia as a local culinary tourism destination.

LIMITATIONS AND FUTURE RESEARCH SUGGESTIONS

The coefficient of determination or R squared of this study's model is only 28.0%, indicating that the variance percentage collectively explains consumer behaviour relating to reference groups, positive online comments, perceived risks, and food safety consciousness. However, according to Hair et al. (2014), the R squared of 28% is deemed weak. Thus, further research should explore the determinant of OFDO behaviour using other theories, such as technology readiness, decomposed theory of planned behaviour, and other benefit dimensions. Usually, the decomposed theory of planned behaviour has higher predictive power than other theories in explaining an individual's behaviour or intention (Moons & De Pelsmacker, 2015).

On the other hand, this study only focuses on the consumer perspective; it would be interesting to know the determinants of the usage of OFDO by food and beverage owners. They are the key players of OFDO and the major influence on consumer decisions due to their vast numbers and various choices they offer. Moreover, since the items used in this study are still new and the area of study is fresh, there is a need to refine them further to be more viable and generalisable scales.

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APPENDICES

Appendix 1

Demographics of respondents

Attribute	Frequency	Percentage
Gender		
Male	98	34
Female	190	66
Age (Years)		
18-25	130	45.1
26-33	57	19.8
34-41	61	21.2
42 and above	40	13.9
Educational Level		
Secondary School	12	4.2
Graduate Level (Diploma/Degree)	189	65.6
Postgraduate (Master/PhD/DBA)	85	29.5
Professional Qualification	2	0.7
Online Food Ordering Frequency		
Not even once a month	8	2.8
Once or twice a month	120	41.7
Once a week	67	23.3
Few times a week	71	24.7
Almost every day	22	7.6
Duration of OFDO Usage		
1-6 months	73	25.3
7-12 months	50	17.4
13-18 months	45	15.6
19-24 months	42	14.6
more than 24 months	78	27.1

Appendix 2

Research instrument

Construct/ Items	Questions
Consumer Purchase Behaviour	
PB1	I have been purchasing through online food delivery regularly
PB2	I have been purchasing online food delivery for my daily needs
PB3	I have been purchasing online food delivery over the past six months
Reference Group	
RG1	I often follow family members' recommendations when I purchase Online Food Delivery

Research instrument (continue)

Construct/ Items	Questions
RG2	I often follow my friends' recommendations when I purchase Online Food Delivery
RG3	I often follow my co-workers' recommendations when I Online Food Delivery
RG4	I often follow web celebrities' recommendations when I Online Food Delivery
Positive Online Comments (POC)	
POC1	I pay special attention to positive online comments when purchasing Online Food Delivery
POC2	I often read online recommendations when purchasing Online Food Delivery
POC3	I often read positive online comments about the Online Food Delivery sold online
POC4	Online recommendations and positive comments make me more confident in purchasing Online Food Delivery
Perceived Risk – Psychological risk (PSR)	
PSR1	OFDO has non-trustworthy/non-reliable service
PSR2	OFDO has improper and late food delivery
PSR3	OFDO has hygiene issues during delivery
PSR4	OFDO is not served as per religious belief
Perceived Risk – Financial risk (FIN)	
FIN1	I fear online fraud when using OFDO
FIN2	The OFDO payment is convenient *(reverse)*
FIN3	OFDO has reasonable delivery fees *(reverse)*
Perceived Risk – Personal Risks (PR)	
PR1	OFDO has a low personal connection or lack of personal touch
PR2	I am uncomfortable with the use of OFDO
Perceived Benefit – Convenience Benefit (CB)	
CB1	The OFDO has a user-friendly app interface
CB2	The OFDO has virtually broad choices for food ordering
CB3	The OFDO is easy from anywhere
CB4	The OFDO has round-the-clock food availability
CB5	The OFDO has door-step food delivery
CB6	The OFDO has diverse online payment options
Perceived Benefit – Value Benefit (VB)	
VB1	The OFDO has value for money food
VB2	The OFDO has better discounts
VB3	The OFDO has better rewards and cashback
Food Safety consciousness (FSC)	
FSC1	When purchasing meals online, I pay special attention to food safety issues

Appendix 3

Measurement model analysis

Construct/items	Loadings	α	CR	AVE
Reference Group		0.791	0.847	0.583
RG1	0.619			
RG2	0.747			
RG3	0.838			
RG4	0.830			
Positive Online Comments		0.878	0.894	0.741
POC1	0.680			
POC2	0.945			
POC3	0.932			
POC4	Deleted			
Perceived Risks		0.724	0.793	0.572
Psychological Risk		0.813	0.790	0.571
PSR2	0.685			
PSR3	0.977			
PSR4	0.539			
Personal Risks		1.000	1.000	1.000
PR1	1.000			
PR2	Deleted			
Financial risk		1.000	1.000	1.000
FIN1	Deleted			
FIN2	1.000			
Perceived Benefit		0.647	0.849	0.738
Convenience Benefit	0.852		0.887	0.529
CB1	0.656			
CB2	0.698			
CB3	0.749			
CB4	0.676			
CB5	0.800			
CB6	0.749			
CB7	0.754			
Value Benefit	0.876		0.915	0.729
VB1	0.804			
VB2	0.892			
VB3	0.870			
VB4	0.846			

Measurement model analysis (continue)

Construct/items	Loadings	α	CR	AVE
Food Safety Consciousness			n/a	n/a
FSC1	SIM			
Purchase Behaviour		0.749	0.858	0.669
PB1	0.878			
PB2	0.837			
PB3	0.732			

Note: SIM=Single Item Measure

Appendix 4

Weight and significance (formative construct)

Latent Variable	Indicator[s]	Weights	t-values[b]	VIF
Perceived Risks	Psychological Risk (PSR)	0.280	0.510	1.791
	Personal Risks (PR)	−0.411	0.683	1.610
	Financial risk (FIN)	0.957	1.712*	1.264
Perceived Benefit	Convenience Benefit (CB)	0.689	5.375**	1.296
	Value Benefit (VB	0.467	3.193**	1.296

Note(s): *p < 0.05; ***p < 0.001