



Consumer experiences, attitude and behavioral intention toward online food delivery (OFD) services



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ABSTRACT

Prior research has mostly examined consumer attitudes toward online services/retailing in general and a few researchers have addressed consumer experiences with online food delivery (OFD) services. The purpose of this study is to examine the structural relationship between convenience motivation, post-usage usefulness, hedonic motivation, price saving orientation, time saving orientation, prior online purchase experience, consumer attitude and behavioral intention towards OFD services. The study proposes an integrative theoretical research model based on the Contingency Framework and Extended Model of IT Continuance. 224 valid questionnaires were collected to empirically test the research model using the partial least square (PLS) path modeling approach. The results imply that the proposed hypotheses were supported, except for the relationship between prior online purchase experience and post-usage usefulness. Practical implications and limitations are discussed.

1. Introduction

E-commerce has surpassed its traditional definition (Jones, 2013). Consumers prefer E-commerce platforms as a shopping medium because they can shop at the comfort of their own homes and at the leisure of their own time (Jiang et al., 2013; Rezaei et al., 2016c). The explosive growth of the Internet has influenced online retailing and E-commerce development in general (Bressolles et al., 2014; Burt and Sparks, 2003; Faqih and Jaradat, 2015; Nilashi et al., 2015; Towers and Xu, 2016). Development of online retailing means a virtually unlimited choice of products and services such that the consumer benefits from product customization, real time interactive communication and fast delivery. The food industry is a saturated market, though, retailers have begun providing additional online services to remain competitive. However, prior research has mostly examined consumer attitudes toward online services/retailing in general and a few researchers have addressed consumer experiences with online food delivery (OFD) services.

According to Spykerman (2013), Malaysia has an Internet penetration rate of 67%. Although the number of users is lower than China, the percentage is higher, which shows that Malaysians in general are more assertive in e-commerce. In China alone, there are over 420 million Internet users, of which 87.88 million users are online shoppers (CNNIC, 2010). According to Euromonitor (2015), the 100% home delivery market in Malaysia has a value of RM253 million in 2014, and

is expected to continue growth at 11% per annum. This is especially evident in the fast food segment that provides delivery to homes. One of the major players, Kentucky Fried Chicken (KFC) started delivery services in Malaysia in 2012 to further enhance their service quality. However, smaller food retailers are also strident to provide these delivery services with the help of food delivery intermediaries. As for online food ordering, Kimes (2011) found that 44% of adults in the US have ordered food online and 23% of large food chains provide delivery services. There are two types of retailers that provide food delivery services. The first are retailers themselves. This category is largely comprised of fast food chains such as Pizza Hut, McDonalds, Domino's Pizza, Kentucky Fried Chicken and so on. The second category is comprised of multiple restaurant intermediaries that provide delivery services for a large range of restaurants. Examples include Food Panda, Room Service, GrubHub, Eat24hours.com, Just-eat.com, Delivery.com and more.

Reasons motivating consumers to buy from an online medium are important for food retailers. In terms of technology adoption, there have been numerous studies that have found a positive relationship between attitude and behavioral intention (Chang et al., 2012; Ingham et al., 2015; Wagner et al., 2016). Consumers prefer to use online services because convenience, usage usefulness and other motives (Kimes, 2011; Littler and Melanthiou, 2006; Saarj arvi et al., 2014) or prior online experiences (Rezaei et al., 2016d). Food is in the category of low involvement products, thus, consumers tend not to

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remember the prices, indicating that consumers make food-price choices rationally at the given time without much consideration of past transactions (Monroe and Lee, 1999). The time-saving factor increases the value of services provided because it reduces the amount of time and energy consumers expend (convenience) to purchase a product (Jeng, 2016), and has been proven significant. However, recent literatures (Alavi et al., 2016; Tsang and Tse, 2005) revealed shopping motivations can also come from values and pleasure that consumer seeks from shopping (Babin et al., 1994). Furthermore, online food consumption is driven by both utilitarian and hedonic motivations (Nejati and Moghaddam, 2013).

Even though OFD is not as popular as other means of ordering food, the number of users are steadily rising. Although the most common ordering method is the telephone, orders through restaurant websites and multi-food websites have reached a substantial amount at 22.9%. Therefore, this research attempts to bridge both the online medium and food delivery services for retailers and marketers to develop more effective strategies to target this market. There has been little research conducted on behavioral intentions towards OFD services. The purpose of this study is to examine the structural relationship between convenience motivation, post-usage usefulness, hedonic motivation, price saving orientation, time saving orientation, and prior online purchase experience, attitude and behavioral intention towards OFD services. Therefore, this study extends the existing consumer behavioral models by including several key constructs to explain the intention to use OFD services.

2. Theoretical background and hypotheses development

This study proposes an integrative theoretical research model (See Fig. 1) based on the Contingency Framework (Anderson and Srinivasan, 2003) and Extended Model of IT Continuance. The Contingency Framework shows support that e-satisfaction has an impact on e-loyalty. It was also discovered through empirical analysis that the relationship is moderated by inertia, convenience motivation, purchase size, perceived value and trust. The foundation of this theory is based on the fact that organizations need to retain their customers to ensure profitability and that loyal customers are worth much more to businesses. Contingency Framework has been adopted for use in many areas of research including the study on books and flights (Harris and Goode, 2004), the effects of website quality on purchase of online tourism products and services (Bai et al., 2008) as well as mobile

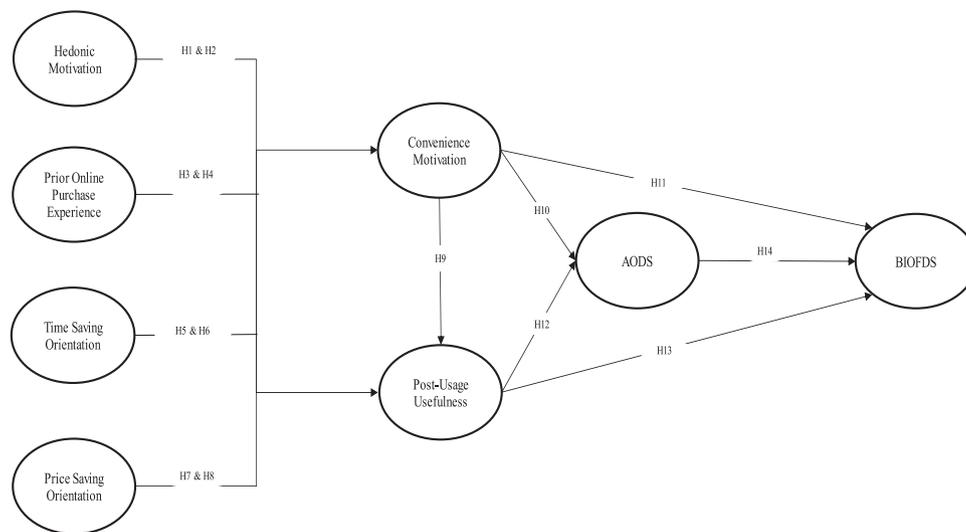
commerce (Amin et al., 2014; Rezaei and Ismail, 2014; Rezaei et al., 2016b).

Moreover, the model of IT Continuance was extended by Bhattacharjee et al. (2008b) by modifying and adding several variables to the original model by Oliver in 1980. Recent research (Rezaei et al., 2016c) claims that post-usage usefulness had a significant effect on IT Continuance. However, this study includes a partial adoption of the model of IT Continuance, namely the variables of post-usage usefulness, attitude and behavioral intentions. The model of IT Continuance shows a direct link between post-usage usefulness to attitude, and attitude to behavioral intentions, which in his case was the continuance of IT products and services. As a driver of users continues intention, post-usage usefulness has been found to influence the association between beliefs and continuance intentions, similar to how attitude mediates the relationship between beliefs and intentions in the Theory of Reasoned Action (TRA) and Theory of Planned Behavior (TPB). This model has been adopted by many researchers to find the continuance of using certain IT such as self-service technologies (Chen et al., 2009), Web 2.0 (Chen et al., 2012), E-learning systems (Lin and Wang, 2012), business simulation games (Tao et al., 2009), open source software (Leea et al., 2009), online banking (Montazemi and Qahri-Saremi, 2015), Apps stores (Rezaei et al., 2016c) and many more. Fig. 1 shows the theoretical research model.

2.1. Hedonic motivations

Shopping for goods or products has been largely regarded as a rational process seen from a utilitarian perspective. Shopping has been viewed as a rational process of acquiring products with a work mentality (Forsythe and Bailey, 1996; Khajehzadeh et al., 2014). Hedonism is the contrast of rationality (to purchase a product efficiently), which may be referred to as the desire to have fun and be playful (Kang and Park-Poaps, 2010; Rezaei et al., 2016a; To et al., 2007). When consumers search for a particular product or service, they are also searching for expected sensory stimulation, symbolism or appreciating the fun during the purchasing process and usage process Holbrook and Hirschman (1982). The authors also stress that the hedonic perspective does not replace the traditional consumption theories, rather working as an extension to enhance the application of consumption theories.

Hedonism may also refer to esthetic and experience-based enjoyment derived from the entire buying decision process; right from need



Note:
 Attitude towards online food delivery services (AODS)
 Behavioral intention towards online food delivery services (BIOFDS)

Fig. 1. Theoretical research model. Note: Attitude towards online food delivery services (AODS). Behavioral intention towards online food delivery services (BIOFDS).

recognition to post purchase behavior, which includes consumption of the product or service (Mort and Rose, 2004). This experiential view of hedonism takes a broad approach to the buying and consumption processes (Rezaei and Ghodsi, 2014). It also takes into account cognitive-rational and problem solving information processing. One major motivation for shopping and consumption comes from emotional arousal, which is derived from hedonism (Escobar-Rodríguez and Carvajal-Trujillo, 2013; Miranda, 2009). Recent research (Bilgihan, 2016) found that hedonism is significant to e-commerce in terms of brand equity, flow and trust that leads to e-loyalty by creating positive online customer experiences. With similar positive results, Wagner et al. (2016) empirically demonstrated that hedonism is very important for Internet-enabled television shopping, especially because it happens in the household context with a relaxed attitude, relating enjoyment with shopping intentions.

In terms of the hedonic website visit, the motivations of a user to visit a website is mainly affected by the enjoyment of the process. This is confirmed by the actual state when compared with the desired state and preferred state. If the actual state is able to meet the expectations of the desired and or preferred state, then the user is enjoying using the website (Alavi et al., 2016; Tsang and Tse, 2005). Most research focuses on the hedonic side of leisure services such as shopping and sports. Some would like to focus on the hedonic side of tangible product consumption, such as compact discs, champagne and wine (Neeley et al., 2010). Furthermore, Childers et al. (2002) empirically revealed in his research that enjoyment has a direct affect towards attitude. Therefore, based on the arguments above, it is believed that a user feels hedonic motivation when attitudes towards OFD services are able to meet his or her expectation. Therefore, the following hypotheses are proposed.

H1. There is a positive relationship between hedonic motivation and convenience motivation.

H2. There is a positive relationship between hedonic motivation and post-usage usefulness.

2.2. Prior online purchase experience

Online purchases can be defined as the intention of individual to purchase products online (Chen et al., 2010). The online purchase is a process that involves an exchange of time, effort and money through the online medium (Wu, 2013). As such, online purchases are still considered more risky than offline purchases because of certain missing elements such as actual interaction with the product (Laroche et al., 2005; Thamizhvanan and Xavier, 2013). Users who have an online experience will experience reduced uncertainty, leading to higher intention to purchase a product or service online. Furthermore, online shoppers who have shopped online before are more willing to do so again because of the confidence that has been built. Expectations from past satisfactory online purchases will also lead to repurchase intentions (Shim et al., 2001).

A person's online experience includes his involvement, cognitive process, flow and schema (Huang, 2012). According to Li et al. (2002), a consumer may learn by experience through the interactions with the online environment. There are two types of online purchase experiences. The first is direct product experience, in which the user has directly interacted with the product itself. Second is the indirect online experience, meaning that the user has only interacted with the advertisements of the product Keng et al. (2011). Post-adoption occurs when a user experiences direct interaction with the product while a pre-purchase adoption occurs when a user has mediated interactions with the products through advertisements (Karahanna et al., 1999). The online buying experience can also lead to loyalty to online stores, especially if they are satisfied by the assortment composition present in the online stores (Melis et al., 2015). Research by Kwek et al. (2010) also revealed that prior experience helps to improve customer purchase

intention regardless of high or low avoidance uncertainty. Most importantly, past purchase experience reduces anxiety about the ambiguity of websites, making interaction with the websites more solid (Shim et al., 2001; Weisberg et al., 2011).

Furthermore, a person's past online purchase experiences will also determine his future expectation of the effort that is required to conduct online shopping. The perceived ease of use captures expectations towards the expectation (Gentry and Calantone, 2002), thus, establishing the relationship between online purchase experiences with convenience motivations (Alavi et al., 2016; Valaei et al., 2016). When customers have the relevant online purchase experience, they tend to find it easier to use and revisit. Thus, repurchase intentions will be higher. Experience in online usage will significantly improve a person's convenience motivation. Upon collection of experience, lesser effort will be needed to operate the technology and thus be perceived as easier to use. Therefore, it is shown that prior online purchase experience has a direct relationship with convenience motivations, and convenience motivations have a direct relationship with attitude. Thus, the following hypotheses have been suggested.

H3. There is a positive relationship between prior online purchase experience and convenience motivation.

H4. There is a positive relationship between prior online purchase experience and post-usage usefulness.

2.3. Time saving orientation

In today's fast paced life, many cannot afford to have the hassle of going out for food, or waiting in a restaurant for food to be served to them (Euromonitor, 2015). Thus, they make the food come to them instead. It is about using the least amount of time to get a task done, thus it becomes a factor of time saving for them. In the USA, one out of every two and a half meals is consumed away from home (Kara et al., 1997). Even in recessionary times, sales of fast food franchises continue to grow. In the United Kingdom, the take-away and delivery segment has experienced a booming growth since the 1980s. The take-away and delivery market is highly fragmented and has a large variety of choices and food types (Alreck and Settle, 2002; Ball, 1999). OFD services also seem to be favorable to customers because of its speed, ease and precision of orders (Verma et al., 2009). A majority of these food deliveries are catered for the household sector, which means it is delivered to homes, at about 70% of orders. This percentage indicates that the target market for food deliveries is focusing more on households.

According to Gentry and Calantone (2002), perceived usefulness captures the buyer's perception that a certain technology will help improve shopping productivity. The time that online shopping save is a utility that customers gain. A customer sees online shopping as useful because it is able to save time, reduce efforts, and offer expanded store hours and efficient checkouts (Chiu et al., 2014). It has also been found that higher income consumers value time due to opportunity costs. That said, people who are income rich but time poor find online shopping attractive because it helps them save time (Punj, 2012). In addition, Eriksson and Nilsson (2007) proposed that the time saving dimension is a strong influence on post-usage usefulness due to the convenience that consumers gain from using online banking and payment systems. Based on the review of literatures, as time saving orientation has a direct effect on post-usage usefulness and post-usage usefulness on attitude, it is anticipated that time saving orientation has an indirect effect on attitude via post-usage usefulness.

Likewise, the ease of technology use is how easy is the process of using a new media when shopping on the web. The easier it is to use, the more time it can save. Perceptions that a system is easy to use will make the process of shopping, the ease of use more appealing (Chiu et al., 2014). A review of 45 articles relating to the adoption of online shopping has revealed that time saving functions and consumer's time

consciousness is positively related to the use and adoption of online shopping (Chang et al., 2005). With the above reviews, the relationships among time saving orientation, convenience motivations and attitude has been established and the following hypotheses are proposed.

H5. There is a positive relationship between time saving orientation and convenience motivation.

H6. There is a positive relationship between time saving orientation and post-usage usefulness.

2.4. Price saving orientation

Price, as defined by Nagle et al. (2010), is the monetary value one must give in exchange for a product or service in a purchase agreement. Consumers look for price saving through price discounts because they are concerned over the amount of money that they are able to save through these discounts (Darke et al. (1995). Another study by Tversky and Kahneman (1981) revealed that consumers were willing to make extra trips just for the discount given by stores on products. The effectiveness of a price discount is also supported by evidence from a research that states discounts will add the perceived value to the offer of a product because it indicates that the price is an even better bargain (Thaler (2008). Lower prices stimulate sales for an organization and higher discounts increase the value of the particular product for consumers (Madan and Suri, 2001). The price saving orientation not only considers the factor of monetary savings, but can also be viewed from the perspective of not incurring any additional costs to purchase a product or using a service (Escobar-Rodríguez and Carvajal-Trujillo, 2014).

A lower price is tempting to managers as well as being both attractive and alluring to consumers (DelVecchio and Puligadda, 2012). In the food segment, different categories of consumers tend to opt for different levels of food quality and price. Consumers tend to rationalize and make decisions based on the maximum benefit that they can get out of that deal by looking for the lowest acceptable price (Ollila, 2011). Naturally, consumers will also take into consideration the nutrition value and price of the food product to be purchased. For instance, an empirical research conducted by (Nakandala and Lau, 2013) has proven that consumers are willing to pay more for food with higher nutrition value and vice versa. For both dine-in and take-away, odd prices for lower priced restaurants will lead to a greater likelihood for consumers to try them (Parikh and Weseley, 2004).

Online consumers have the ability to compare prices by browsing different sites and the firm that is able to offer a lower price will be perceived as the more useful website. The Internet makes it easier for comparing prices, thus proving useful for buyers buy products at a lower cost (Chiu et al., 2014; Eriksson and Nilsson, 2007; Gentry and Calantone, 2002). Comparing traditional retail and online shopping, the relative advantage of online shopping is that it is able to provide both lower costs and saves time and make online shopping much more convenient, as proven empirically (Akroush and Al-Debei, 2015). The above arguments reflect the relationship between price saving orientation, post-usage usefulness, convenience motivation and attitude. Therefore, the following hypotheses are proposed.

H7. There is a positive relationship between price saving orientation and convenience motivation.

H8. There is a positive relationship between price saving orientation and post-usage usefulness.

2.5. Convenience motivation and post-usage usefulness

Part of the Technology Acceptance Model (TAM) Davis (1989), Dinev and Hu (2007) is adopted in this study to examine the acceptance of a new technology. TAM suggests that when a user comes

across a new technology, there will be several factors that affect how they come to accept and use the technology. It has been used in both consumer and organizational context to explain the factors affecting acceptance of certain technology or systems (Rezaei et al., 2016c). Examples of such context include business graphic programs, online shopping for apparels (Kim and Forsythe, 2008), mobile Internet (Venkatesh et al., 2012), smartphone usage (Chun et al., 2012), social media (Pinho and Soares, 2011), mobile policing (Lindsay et al., 2011), teleworking (Pérez et al., 2004) and social media, specifically instant messaging services (Zhao et al., 2016). These studies have shown that the factors namely perceived usefulness and perceived ease of use has been able to explain how easy or difficult it is for users to accept the use of the various types of technology. However, post-usage usefulness and convenience motivation supersedes perceived usefulness and perceived ease of use. Therefore, from the argument above the following hypotheses are proposed.

H9. There is a positive relationship between convenience motivation and post-usage usefulness.

H10. There is a positive relationship between convenience motivation and attitude towards OFD services.

H11. There is a positive relationship between convenience motivation and behavioral intention towards OFD services.

Perceived usefulness is defined as the degree to which a person believes that using a particular system would enhance his or her job performance (Davis, 1989; Pérez et al., 2004) TAM is an influential extension of TRA. From the consumer perspective, perceived usefulness refers to how consumer performance would improve by adopting a given technology. Post-usage usefulness, reflects the long-term belief of usefulness, as compared to Davis' perceived usefulness, which is just perception (Bhattacharjee et al., 2008b). It is argued that this variable has more utility in the sense that it is more stable, as it will only occur after a user has adapted it for a longer time of period, therefore having a more dominant effect. Perceived ease of use is the degree to which an individual anticipates mental or physical difficulties when adopting a certain technology (Pinho and Soares, 2011). Recent study has revealed that convenience motivation, which falls under the individual level factors, is able to positively moderate the relationship between e-satisfaction and e-loyalty (Anderson and Srinivasan, 2003). Previous study (Chang et al., 2012) has empirically demonstrated that convenience motivation does affect attitude in the context of adoption of English learning among college students. Davis (1989) hypothesized that the attitude of the user will ultimately determine whether the user will actually choose to accept or reject the system. Similarly, post-usage usefulness has been shown to positively affect relationship between attitudes for continuance intentions and e-satisfaction, respectively (Belanche et al., 2012; Di Pietro et al., 2014).

Attitude is defined by Park and Kim (2013) as user preferences when they use certain technologies and devices. That is to say, post-usage usefulness refers to how much easier it would be to do something with the given technology while convenience motivation is the amount of effort one has to make in order to be able to use a new system or technology. This is justified because convenience motivation would provide better performance on a system, thus allowing a user to accomplish more tasks in a shorter span of time. A system that is easier to use will be perceived as a more useful system over time. Therefore, between two systems that offer the same functionality, users are more likely to choose the system that is easier to use, hence making it a more useful system. The above studies show significant results such that post-usage usefulness and convenience motivation affect the attitude that one has towards a new technology. Therefore, the following hypotheses are proposed.

H12. Post-usage usefulness positively affects attitude towards OFD services.

Table 1
Sample characteristic (N=224).

	Characteristic	Frequency	Percentage (%)
Gender	Male	117	52.2
	Female	107	47.8
Age	below 17	2	0.9
	18–22	192	85.7
	23–29	28	12.5
	30 and above	2	0.8
Ethnicity	Malay	17	7.6
	Chinese	187	83.5
	Indian	7	3.1
	Others	13	5.8
Highest level of education	Pre University	36	16.1
	Diploma	52	23.2
	Degree	125	55.8
	Other	9	4.8
OFR usage frequency	Minimal Usage	140	62.5
	Light Usage	58	25.9
	Moderate Usage	21	9.4
	Very Heavy Usage	2	0.9
	Extremely Often Usage	3	1.3
OFR usage duration	1–6 months	110	49.1
	7–12 months	38	17
	13–18 months	17	7.6
	19–24 months	17	7.6
	25–30 months	10	4.5
	30+ months	32	14.3

H13. Post-usage usefulness positively affects behavioral intention towards OFD services.

Moreover, in a seminal article by Davis (1989), the adoption of a technology is determined by behavioral intentions where it is a combination of the person's attitude and perceived usefulness. Behavioral intention is highly predictable by attitude as it has a significant positive effect. As Ajzen and Fishbein (1977) have argued, a person's attitude may influence the response to a stimulant. The criteria of a behavior depend on observable actions by the individual. The authors go on further to say that a person who holds a favorable attitude towards an action will be more inclined to perform a particular behavior (Kuo and Yen, 2009; Rezaei et al., 2016c). With that established, it is clear that attitude has a positive correlation with behavioral intention. Examples include protective information technology, more commonly known as anti-virus software (Dinev and Hu, 2007), participation in virtual communities, e-learning (Liaw, 2008; Liaw et al., 2007), Internet-based learning (Lee et al., 2005) personal digital assistant in the healthcare industry (Yi et al., 2006), search engines (Liaw and Huang, 2003), technology in the hotel industry (Lam et al., 2007), blogs (Hsu and Lin, 2008), and Internet banking (Shih and Fang, 2004). Limayem et al. (2000) revealed that attitude towards online shopping is the strongest towards intention to shop online. The longitudinal study has indicated that there is a need to further examine the antecedents of attitude that leads to the intention to shop online. A separate study examined the antecedents divulge consumer demographics and lifestyle to positively affect attitude and ultimately towards intention to shop online (Taylor and Todd, 1995; Wu, 2003). Following the analyses, the following hypotheses are proposed.

H14. There is a positive relationship between attitude towards OFD services and behavioral intention towards OFD services.

3. Research method and data analysis

To conduct empirical research and test the proposed model (Fig. 1),

the positivism philosophy has been adopted along with deductive approach to theory development. Cross sectional data collection approach-survey strategy, in regards to this research, the chosen paradigm was the positivist approach and the philosophy of positivism as the collection of data is prepared to search regularities, patterns and causal relationships to create generalizations about them. According to Saunders et al. (2009), to ensure that there is no biasness in the research, the positivist approach ensures as much as possible that the data collected is neutral and not influenced by a researcher's "feelings". Moreover, non-probability sampling method was selected. Non-probability sampling refers to the selection of respondents being a subjective judgment by the researcher (Saunders et al., 2009; Sekaran and Reviews, 2006). This approach is selected because the population is not known, the sampling frame is not available, and data collection can be done more quickly at a lesser cost in marketing research (Kotler and Armstrong, 2015). In addition, convenience sampling technique is appropriate to collect samples as it allows the ease of data collection as well as at a relatively low cost (Battaglia, 2008). According to Saunders et al. (2009), although selected haphazardly, convenience sampling is able to meet the purpose of the research objectives. To avoid problems that may arise from convenience sampling, a larger variation in the sample was selected. Thus, the purposive sampling technique was applied in this research. Thus, purposive sampling or more commonly known as judgmental sampling is selected to collect the required data. Purposive sampling is used because it selects samples that are more representative of the population. Thus, it has been ensured that all participants selected know what attitude towards OFD services is and are users of attitude towards OFD services to give a better and more accurate representation of the population, purposive sampling was used.

Questionnaires are used in the data collection process for this research. Questionnaires were selected due to various advantages such as cost advantage, greater geographical coverage, provides anonymity and also to reduce the biasness through the pressure an interviewer can give. A pre-test with 30 samples was conducted to ensure the questionnaire is suitable and usable for this research. According to previous study (Burmeister and Aitken, 2012), a reasonable number of sample for purposive depends on the technique. In this research, the reasonable number or minimum requirement of sample size was detected 100–150 samples (Rezaei, 2015) to test the model using PLS-SEM. However, other research has found the effect of larger sample sizes to give higher accuracy (Delice, 2010). The questionnaire was designed in two sections. In the demographics section, there were a total of seven variables: gender, age, nationality, ethnicity, highest level of education, attitude towards OFD services usage frequency, and Usage Duration (See Table 1). The second section of questionnaire include the research variables that were adopted from previous studies (See Appendix A: Measurement scale). The scales used in second section was nominal, as the 5 point Likert scale was primarily adopted. It ranges from Strongly Disagree to Strongly Agree (5). According to Dawes (2007), a 5 or 7 point Likert scale is more likely to produce slightly higher mean scores as compared to a 10 point scale, which makes comparing data a much easier process.

For the main data collection, the hybrid distribution method was considered. Firstly, paper-pencil questionnaire was distributed to potential respondents. Based on the sampling method, potential respondents were selected and to complete the questionnaire. Participation were strictly voluntary and anonymous. Secondly, online questionnaire with paper-pencil questionnaire was distributed via hyperlink in e-mails and on social networking sites. Respondents were given one week to complete the questionnaire and responses captured instantly upon the completion of the questionnaire. A gentle reminder was given to those who have yet to complete the survey after three days of the first request. 100 hardcopies were distributed and collected while 200 invitations were sent out on social media site Facebook to collect response, as only 50% were expected to be collected. The samples

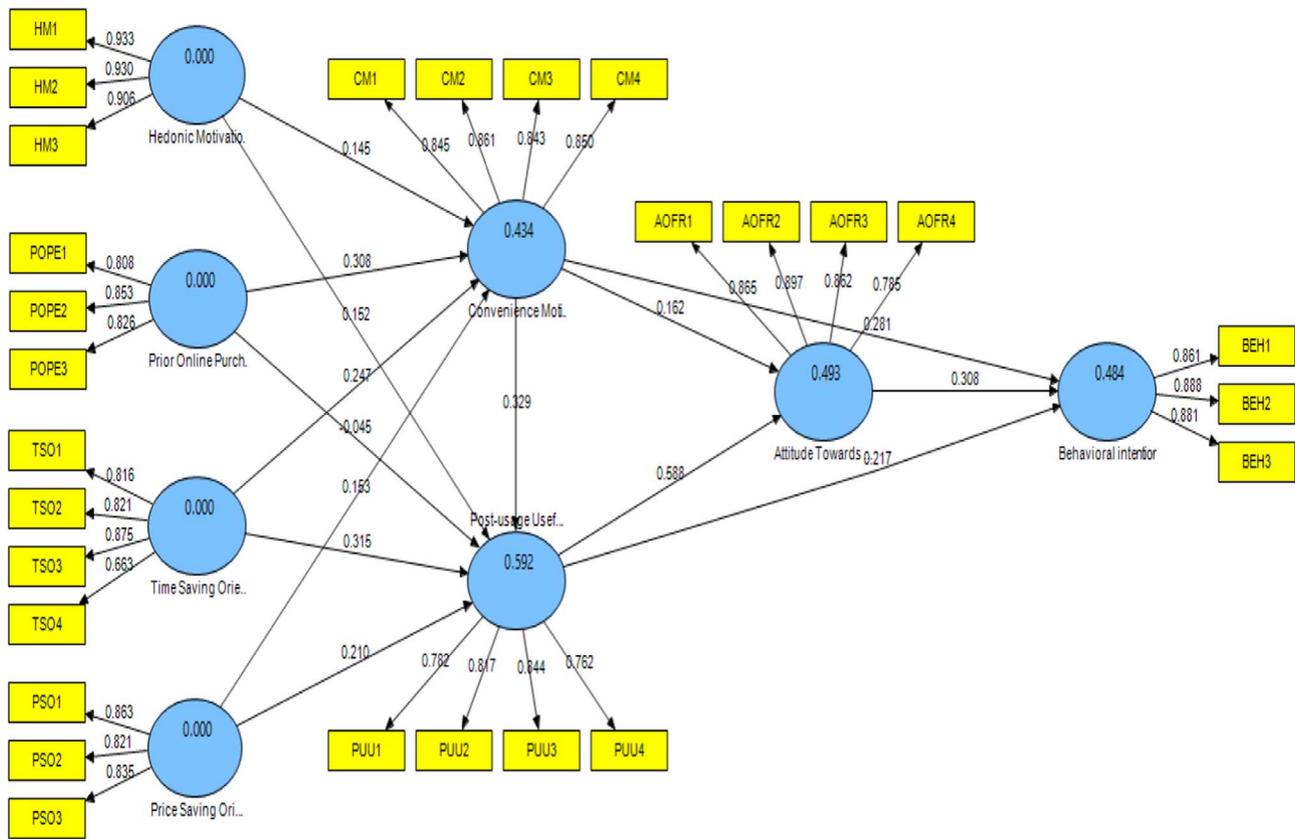


Fig. 2. PLS Algorithm results.

collected were from students. Thus, hardcopies were distributed in the vicinity of the campus, while online questionnaires were sent to students of different universities off campus. All questionnaires were distributed in a three-day span to ensure consistency in the sampling time frame. Furthermore, as OFD services were limited within the Klang Valley, the respondents were also confined to this same area. Of the 236 responses collected, there were 12 that were incomplete and thus deemed unusable. A total of 95% of the collected response is usable.

Furthermore, common method variance (CMV) (Podsakoff et al., 2003), which threatens the validity of the findings on linkage results between constructs (Reio, 2010; Williams and Brown, 1994), was considered. Following the guidelines recommended by Podsakoff et al. (2003), common scale anchors, common rate effects, acquiescence biases (yea-saying and nay-saying), item characteristic effects, item priming effects and scale length were avoided in the design of the questionnaire. Furthermore, statistical techniques such as Harman's one-factor test was conducted. Statistical results show that CMV is not a concern in this study. In addition to CMV, non-response bias, considered as another major concern in survey studies (Michie and Marteau, 1999), was considered. "Response bias occurs when individuals who respond to a survey differ systematically from those who were invited to participate but did not respond" (Menachemi, 2010, p. 5). In this study, methods and procedures proposed by Lynn (2008) and Armstrong and Overton (1977) include wave analysis and analysis of known sample characteristics. Thus, analysis of known demographic and sample characteristics including age (below 17, 18–22, 23–29, 30 and above), gender (Male and Female), OFR Usage Frequency, OFR Usage Duration and comparing key constructs of study such as hedonic motivation, price saving orientation, time saving orientation, prior online purchase experience, and BIOFDS shows no significant differences (significance level below 0.05) between the groups using the *t*-test. Therefore, the study proceeds with the primary data analysis procedures.

3.1. Partial least square (PLS) path modeling approach

Partial Least Square (PLS) (Wold, 1974) is structural equation modeling (SEM) method "based on an iterative approach that maximizes the explained variance of endogenous constructs" (Fornell and Bookstein, 1982), which is a variance based structural equation modeling (VB-SEM) technique. In simple terms, it is a method that quite similar to regression analysis as a method that relies on data and a theory as a skeleton. In its process, there is an extraction of data to fit into the model (Hair et al., 2014). There is a surge of increase in the usage of PLS-SEM due to its ability to undertake problematic models and its issues. PLS-SEM is most commonly attributed to research that has non-normal data, small sample sizes and formatively measured constructs (Hair et al., 2014). While CB-SEM focuses only on measurement errors or a set of model parameters (Reinartz et al., 2009), PLS-SEM enable researchers to assess both casual relationships between indicators/items and further casual relationships between latent constructs (Gudergan et al., 2008). Unlike covariance-based SEM (CB-SEM), PLS is also suitable for exploratory and confirmatory research (Gefen et al., 2000; Westland, 2007) in the assessment of complex and large relationships (many indicators and constructs) (Chin et al., 2003; Sarstedt, 2008). In addition, PLS methodologies and related software such as SmartPLS does not provide fit indices (X^2/df , GFI, AGFI, CFI, RMSEA, NNFI) such as goodness of fits and a model with good fit indices (Chin, 1998). However, "the PLS algorithm allows each indicator to vary in how much it contributes to the composite score of the latent variable" (Chin et al., 2003, p. 25) demonstrated by inner model assessment (measurement model). PLS-SEM has also been used in various fields of academics, namely supply chain management (Hazen et al., 2015), tourism (Valle and Assaker, 2015), and consumer behavior (Zhang, 2009). It has been widely used for several reasons (Monecke and Leisch, 2012) as a modular method to calculate indices, plotting features to better understand multivariate models, and easy

extensible infrastructure. Thus, this research performed PLS-SEM methodology to assess measurement and structural model using SmartPLS software (Ringle et al., 2005).

3.1.1. Measurement model (Construct validity)

To assess measurement model (Construct validity) and item loading (See Fig. 2), AVE, Composite Reliability (CR) and Cronbach Alpha values were assessed. The reliability and validity tests are conducted to ensure that the measurements of the questions provide sufficient coverage of the investigative questions. It also concerns the ability of the questions to make accurate predictions relevant to this research. Reliability refers to the consistency of the questions in the questionnaires, meaning that the interpretation of the questions by the respondent is the same as intended. The consistency was assessed using Cronbach's Alpha values. These measure the consistency of a set of responses to a set of questions in measuring a particular concept. According to Saunders et al. (2009), a value of 0.7 and above indicates that the questions in the scale are measuring the similar variable. The Cronbach's Alpha test is conducted to test the internal consistency reliability. The minimum cut-off value suggested (Hair et al.), is 0.60. Thus, all the variables fulfill requirements for internal consistency, item loading, AVE, and Composite Reliability (See Table 2).

Moreover, to assess discriminant validity, Fornell Larcker criterion-Latent Variable Correlations and Cross loading (Discriminant Validity) were considered. As shown in Table 3, the diagonals represent the square root of AVE and the off-diagonals represent the correlation. The diagonals values are higher than off-diagonals, thus implying that discriminant validity exist according to Fornell Larcker criterion. Likewise, bold values are loadings for each item (Table 4), which are above the recommended value of 0.5. An item's loadings on its own variable are higher than all of its cross-loadings with other variable imply that discriminant validity among constructs exist.

3.1.2. Structural model

Once the measurement model was assessed and established, the second step was to assess the structural relationship. The structural model has been assessed as shown in the Table 5 and Table 6. The bootstrapping procedure allows for the statistical testing of the hypothesis such that a coefficient equals zero as opposed to the alternative hypothesis that the coefficient does not equal zero (Hair et al., 2011). As shown in Table 5, the positive relationship between Hedonic Motivations and Convenience Motivation was supported with Path coefficient 0.145, S 0.059, Standard Error 0.059 and T-Statistics of 2.448. Furthermore, Hedonic Motivations and Post-usage Usefulness are positively related (Path coefficient=0.152, SD=0.056, Standard Error=0.056, T-Statistics=2.694). Hypothesis 3 (Prior Online Purchase Experience -> Convenience Motivation) with Path coefficient=0.308, SD=0.058, Standard Error=0.058, T-Statistics=5.333 was supported, while H4 (Prior Online Purchase Experience -> Post-usage Usefulness) with Path coefficient=0.045, SD=0.052, Standard Error=0.052, T-Statistics=0.859 was not supported. Table 5 shows the structural relationships and Hypotheses testing.

Before assessment of path coefficient, multicollinearity was assessed and there were no issues. Results of R² imply an attitude towards OFD services, Convenience Motivation, and Post-usage Usefulness and explain 0.484 of variance in behavioral intention. Finally, using blindfolding procedure for all endogenous latent constructs in the model, Q² values are considerably above zero. Table 6 shows that all Q² values are considerably above zero, thus providing support for predictive relevance for endogenous research constructs (Hair et al., 2013). Fig. 2 depicts the PLS Algorithm results, including R² for exogenous latent constructs.

4. Discussion and conclusion

The TAM, model of IT Continuation and Contingency Framework

Table 2
Construct validity.

Research construct	Item	Item loading	AVE	Composite reliability	Cronbach's Alpha
Attitude towards OFD services	AODS1	0.865	0.728	0.914	0.875
	AODS2	0.897			
	AODS3	0.862			
	AODS4	0.785			
Behavioral intention towards OFD services	BIOFDS1	0.861	0.768	0.908	0.849
	BIOFDS2	0.888			
	BIOFDS3	0.881			
Convenience motivation	CM1	0.845	0.722	0.912	0.872
	CM2	0.861			
	CM3	0.843			
	CM4	0.850			
Hedonic motivations	HM1	0.933	0.852	0.945	0.913
	HM2	0.930			
	HM3	0.906			
Prior online purchase experience	POPE1	0.808	0.688	0.869	0.775
	POPE2	0.853			
	POPE3	0.826			
Price saving orientation	PSO1	0.863	0.706	0.878	0.791
	PSO2	0.821			
	PSO3	0.835			
Post-usage usefulness	PUU1	0.782	0.643	0.878	0.815
	PUU2	0.817			
	PUU3	0.844			
	PUU4	0.762			
Time saving orientation	TSO1	0.816	0.636	0.874	0.804
	TSO2	0.821			
	TSO3	0.875			
	TSO4	0.663			

Notes*: a) Average variance extracted (AVE)= (summation of the square of the factor loadings)/((summation of the square of the factor loadings)+(summation of the error variances)). b) Composite reliability (Sekaran and Reviews)=(square of the summation of the factor loadings)/((square of the summation of the factor loadings)+(square of the summation of the error variances)).

were used to investigate the relationship between external factors and intention towards OFD services mediated by post-usage usefulness and convenience motivation. Davis (1989) hypothesized that perceived usefulness and ease of use will determine attitudes towards a technology. Results have further demonstrated the validity of the theoretical foundations used. It has also shown the relationship between latent variables towards attitude and behavioral intentions. This means that with a better perception of post-usage usefulness and convenience motivation, a person's attitude towards OFD services will improve significantly, thereby increasing intentions to use OFD services. Therefore, H1 and H2 and H3 are accepted.

Based on previous research, hedonic motivation has been proven to be an important factor that leads to a positive attitude and intention to purchase. Hedonic shopping values have led to a positive attitude

Table 3
Discriminant validity – latent variable correlations.

Research construct	Attitude towards OFD services	BIOFDS	Convenience motivation	Hedonic motivations	Post-usage usefulness	Price saving orientation	Prior online purchase experience	Time saving orientation
Attitude towards OFD services	0.728							
Behavioral intention	0.509	0.768						
Convenience motivation	0.536	0.585	0.722					
Hedonic motivations	0.472	0.554	0.465	0.852				
Post-usage usefulness	0.691	0.409	0.537	0.529	0.643			
Price saving orientation	0.493	0.457	0.433	0.379	0.548	0.706		
Prior online purchase experience	0.364	0.460	0.541	0.432	0.422	0.342	0.688	
Time saving orientation	0.444	0.432	0.545	0.523	0.44	0.488	0.481	0.636

Note*: The diagonals represent the square root of AVE and the off-diagonals represent the correlation.

towards purchasing music online and repurchase intentions (Bui and Kemp, 2013). Hedonic motivation has been found to be a significant variable ($r=0.471$ and $p=0.01$) with a moderate positive relationship with attitude. This means that with a better hedonic motivation, attitude towards OFD services tends to be positive ultimately leading to intention to use OFD. When users perceive that OFD services are able to provide fun and pleasure, they are more likely to have a positive attitude and tend to use OFD services. Therefore, H6 and H7 have been accepted.

A person's online purchase experience would be considered an important factor that affects both attitude and intention to purchase (Weisberg et al., 2011). Based on (Hernández-Ortega et al., 2008) research, convenience motivation becomes more important with experienced users for online purchases. Results have shown that there is a full mediation where prior online purchase experience has an indirect relationship with attitude through the mediation of convenience motivation. However, it may be seen through results that prior experience does not lead to the perception of usefulness of the technology. Lord and Maher (1990) posit that users will draw accumulated knowledge, thus affecting their decisions. If the experiences are negative, this will affect their future decisions and affect the perception of post usage usefulness. Since results were positively significant for convenience motivation, experienced users in online purchases would prefer to exert less effort to use OFD services. Therefore, H3 is accepted but H4 is rejected.

Based on the research by previous study (Jiang et al., 2013), results have shown that a consumer's perception towards online will improve if the service is able to provide access convenience, which is the ability to shop online at anytime and anywhere. Also, consumer perceptions become positive when they are able to avoid dealing with the physical burden of travelling. In this research, it is confirmed that consumer's attitude towards OFD improves when it has the element of time saving it concurs with the research by previous study (Childers et al., 2002; Eriksson and Nilsson, 2007) that time saving improves attitude through ease of use and usefulness. When users are able to save time, they are more likely to use OFD services. Therefore, H5 and H6 are accepted.

Quelch and Klein (1996) found that the Internet will cause price wars due to easy search and comparison across different prices. Thus, consumers will choose to buy the cheaper priced product when comparing against two sellers. Michalak and Jones (2003) have also found out that Internet retailers will use discount strategies to increase sales. The study by Audrain-Pontevia et al. (2013) was able to confirm that online purchases provides transaction value to its users, as they are able to buy products after comparing it to other offers. Price saving orientation has been found to have an indirect relationship with attitude through the mediation of post-usage usefulness, confirming H7 and H8. Therefore, the results have shown similarity with past research where consumers will be concerned with prices and discounts that they can acquire through purchasing online and in this case, specifically in attitude towards OFD services.

In the original TRA model, self-efficacy was a strong and influential variable explaining attitude and intention. In general, a higher self-efficacy would increase the effect of attitude onto intention. However, in this model, it was deliberately omitted due to the nature of the technology and sample. Ordering food online is not a very difficult task and can be performed by many people, especially since the majority of this sample is the younger generation which is more well versed with technology (Kulviwat et al., 2014). In several research papers, self-efficacy was found to be insignificant towards students' smartphone adoption (Lee, 2013) and instant messaging (Lu et al., 2009). Furthermore, a study revealed that although older Internet users had lower Internet self-efficacy, this did not affect their intention to adopt technologies (Chung et al., 2010). The activities mentioned above, such as using a smartphone or instant messaging is not a difficult task, especially for younger generation students. Therefore, self-efficacy was

Table 4
Cross loading (Discriminant Validity).

Research construct/items	Attitude towards OFD services	Behavioral intention	Convenience motivation	Hedonic motivations	Prior online purchase experience	Price saving orientation	Post-usage usefulness	Time saving orientation
AODS1	0.865	0.523	0.465	0.415	0.371	0.437	0.503	0.506
AODS2	0.897	0.573	0.492	0.421	0.313	0.387	0.587	0.471
AODS3	0.862	0.494	0.477	0.399	0.307	0.433	0.639	0.484
AODS4	0.785	0.485	0.391	0.376	0.246	0.431	0.525	0.388
BIOFDS1	0.555	0.861	0.565	0.534	0.459	0.438	0.579	0.594
BIOFDS2	0.517	0.888	0.492	0.478	0.409	0.367	0.494	0.409
BIOFDS3	0.523	0.881	0.472	0.436	0.332	0.391	0.520	0.378
CM1	0.428	0.535	0.845	0.421	0.504	0.318	0.518	0.402
CM2	0.445	0.515	0.861	0.368	0.412	0.334	0.489	0.456
CM3	0.490	0.459	0.843	0.379	0.378	0.408	0.585	0.481
CM4	0.459	0.480	0.850	0.410	0.539	0.408	0.570	0.510
HM1	0.459	0.522	0.460	0.933	0.395	0.315	0.505	0.508
HM2	0.430	0.537	0.410	0.930	0.390	0.346	0.491	0.475
HM3	0.417	0.473	0.415	0.906	0.412	0.393	0.468	0.463
POPE1	0.387	0.418	0.506	0.438	0.808	0.365	0.401	0.461
POPE2	0.285	0.411	0.438	0.344	0.853	0.222	0.314	0.350
POPE3	0.208	0.299	0.382	0.267	0.826	0.242	0.319	0.368
PSO1	0.373	0.379	0.390	0.338	0.337	0.863	0.470	0.468
PSO2	0.404	0.390	0.371	0.346	0.334	0.821	0.449	0.388
PSO3	0.469	0.383	0.328	0.270	0.185	0.835	0.462	0.370
PUU1	0.471	0.458	0.479	0.334	0.336	0.389	0.782	0.582
PUU2	0.569	0.469	0.470	0.435	0.307	0.488	0.817	0.523
PUU3	0.426	0.542	0.561	0.520	0.304	0.463	0.844	0.556
PUU4	0.537	0.478	0.530	0.392	0.415	0.413	0.762	0.437
TSO1	0.465	0.434	0.480	0.335	0.389	0.419	0.485	0.816
TSO2	0.402	0.373	0.421	0.378	0.384	0.377	0.486	0.821
TSO3	0.434	0.458	0.456	0.494	0.451	0.398	0.596	0.875
TSO4	0.432	0.425	0.375	0.454	0.298	0.359	0.510	0.663

Bold values are loadings for each item, which are above the recommended value of 0.5; and an item's loadings on its own variable are higher than all of its cross-loadings with other variable.

not included in this model because most students are confident and skillful enough to order food online, as it does not present a challenge to them.

For marketers who are interested to increase intention to use OFD services, the factors above have been identified and may be manipulated for the benefit of businesses. Hedonic motivation is a significant variable, which concurs with research on gamification to attract consumers in the online retail experience. According to [Insley and Nunan \(2014\)](#), the fun element in games can be transferred to e-commerce websites to attract customers via more enjoyable experience through interactions. Thus, marketers can devise strategies and modify a customer's online interaction to enhance the experience and possibly increase a customer's intention to use OFD services.

Furthermore, customers are attracted to technology that can provide them convenience through saving time and effort. Thus, the

Table 5
Structural relationships and Hypotheses testing.

Hypothesis	path	Path coefficient	Standard Error	T-Statistics	Decision	
H1	Hedonic Motivations -> Convenience Motivation	0.145	0.059	0.059	2.448*	Supported
H2	Hedonic Motivations -> Post-usage Usefulness	0.152	0.056	0.056	2.694*	Supported
H3	Prior Online Purchase Experience -> Convenience Motivation	0.308	0.058	0.058	5.333*	Supported
H4	Prior Online Purchase Experience -> Post-usage Usefulness	0.045	0.052	0.052	0.859*	Not Supported
H5	Time Saving Orientation -> Convenience Motivation	0.247	0.059	0.059	4.180*	Supported
H6	Time Saving Orientation -> Post-usage Usefulness	0.315	0.061	0.061	5.158*	Supported
H7	Price Saving Orientation -> Convenience Motivation	0.153	0.062	0.062	2.483*	Supported
H8	Price Saving Orientation -> Post-usage Usefulness	0.210	0.053	0.053	3.936*	Supported
H9	Convenience Motivation -> Post-usage Usefulness	0.329	0.063	0.063	5.215*	Supported
H10	Convenience Motivation -> Attitude towards OFD services	0.162	0.062	0.062	2.614*	Supported
H11	Convenience Motivation -> BIOFDS	0.281	0.071	0.071	3.975*	Supported
H12	Post-usage Usefulness -> Attitude towards OFD services	0.588	0.058	0.058	10.135*	Supported
H13	Post-usage Usefulness -> BIOFDS	0.217	0.076	0.076	2.843*	Supported
H14	Attitude towards OFD services -> BIOFDS	0.308	0.076	0.076	4.035*	Supported

Note: Critical t-values: *2.326 (significance level=1% or 0.01)

Table 6
Results of R² and Q² for Endogenous Constructs.

Endogenous latent construct	R ²	Q ²
Attitude towards OFD services	0.493	0.358
BIOFDS	0.484	0.352
Convenience Motivation	0.434	0.312
Post-usage Usefulness	0.592	0.380

Note: Q² values of 0.02, 0.15, and 0.35 indicate that an exogenous construct has a small, medium, or large predictive relevance for a selected endogenous construct.

website must be user friendly and be able to process the customer's request as quickly as possible. In return, this will enable customers to complete a transaction quickly, which is both beneficial to the customer

and marketers. Having certain discounts or promotions may also attract price-sensitive consumers, as they are likely to choose the channel with provides them the best value for money. To date, there has been little research done on OFD services. This research has strictly focused on finding factors affecting attitude towards online food retailing. There may have been a similar research conducted in other countries regarding OFD. However, the factors that were analyzed and context were different, contributing to the knowledge base for further research.

This research was conducted with a very limited number of responses at 224. A larger sample would have provided an even better representation of the population. Furthermore, the samples that were gathered were mostly Chinese ethnicity students with an age range of 18–22, which is also insufficient to be a representation of the population. Secondly, due to time and resources constraints, the study

was unable to fully utilize the TAM model to provide more insight to behavioral intentions. If the entire TAM model were to have been adopted, it would have provided a better analysis of the current state of intention to adopt OFD services. Also, this study was only conducted in Malaysia, and particularly the Klang Valley. Thus, the context will only apply to this country and area. It may vary across other countries due to cultural difference, acceptance of technology, and many other factors. Therefore, the model used in this research should be replicated and tested in other countries to further confirm its validity and usefulness.

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Appendix A

See Table A1.

Table A1
Measurement scale.

Research construct	Scale ^a	Source
Hedonic Motivations	HM1 I find that using OFD services is fun. HM2 I find that using online OFD services are enjoyable HM3 Using OFD services is very entertaining.	(Escobar-Rodríguez and Carvajal-Trujillo, 2013; Khajehzadeh et al., 2014; To et al., 2007)
Price Saving Orientation	PSO1 I can save money by using prices of different online OFD services PSO2 I like to search for cheap food deals in different online food retailer's websites PSO3 Online food retailer offer better value for my money	(Escobar-Rodríguez and Carvajal-Trujillo, 2013)
Time Saving Orientation	TSO1 I believe that using OFD services are very useful in the purchasing process. TSO2 I believe that using OFD services helps me accomplish things more quickly in the purchasing process. TSO3 I believe that I can save time by using OFD services in the purchasing process. TSO4 It is important for me that purchase of food is done as quickly as possible using OFD services.	(Alreck and Settle, 2002)
Prior Online Purchase Experience	POPE1 I feel comfortable of using the OFD services. POPE2 I am experienced with the use of the OFD services. POPE3 I feel competent of using the OFD services	(Thamizhvanan and Xavier, 2013)
Convenience Motivation	CM1 I would find doing online shopping and web-based online transactions on OFD services web pages easy. CM2 I would find interaction through OFD services web pages clear and understandable. CM3 I would find it easy to become skillful at navigating through OFD services web pages. CM4 Overall, in using OFD services, online shopping or transaction would be easy for me	(Anderson and Srinivasan, 2003; Childers et al., 2002)
Post-usage Usefulness	PUU1 Using OFD services would enable me to accomplish shopping more quickly than using traditional approaches. PUU2 Using OFD services would enhance my effectiveness in shopping or information seeking. PUU3 I would find the OFD services useful. PUU4 OFD services transaction is advantageous.	(Bhattacharjee, 2001; Bhattacharjee et al., 2008a)
Attitude towards OFD services	AODS1 Purchasing food through OFD services is wise AODS2 Purchasing food through OFD services is good AODS3 Purchasing food through OFD services is sensible AODS4 Purchasing food through OFD services is rewarding	(Childers et al., 2002)
Behavioral intention towards OFD services	BI1 I plan to use OFD value-added services in the future. BI2 If possible, I will try to use OFD value-added services. BI3 I will try to use OFD value-added services if necessary.	(Escobar-Rodríguez and Carvajal-Trujillo, 2013; Kuo and Yen, 2009; Taylor and Todd, 1995)

^a 5 point Likert scale anchored from 1 strongly disagree to 5 strongly agree.

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