

Drivers of online food delivery orientation

Ayat Mohammad^a, Rand Aldmour^b and Sulieman Al-Hawary^{c*}

^aThe World Islamic Sciences and Education University (WISE), Jordan

^bThe University of Jordan, Jordan

^cAl al-Bayt University, Jordan

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ABSTRACT

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The aim of this study is to validate the effects of three selected major drivers; namely technological, marketing, and behavioral on online food delivery orientation. A conceptual framework is developed based on the three selected major drivers from the previous studies. To achieve the study objective, a quantitative method, a cross-sectional survey of the users of online food delivery applications, was used and one-hundred and fifty four questionnaires were gathered and analyzed via IBM SPSS and AMOS software. The finding revealed that the model was valid and technological, marketing, and behavioral drivers were found to positively predict online food delivery orientation. Based on the study results, several recommendations were suggested in this study to improve the food delivery.

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1. Introduction

Researchers are increasingly interested in studying the aspects of customer electronic purchasing behavior and the factors affecting it in some sectors such as restaurants. Companies that provide online food delivery services represent a new form of companies that have the resources required to deliver goods to customers and are not part of or affiliated with the producing company. The advantages of these companies are that they can spread geographically, are independent and share their resources with other companies to provide services to customers (Çavuşoğlu, 2012). Examples include companies that provide food delivery services from different restaurants only. Nevertheless, there are big restaurants that have their own delivery systems. Technology has changed the way restaurants operate. Moreover, consumption patterns of customers have also changed for several reasons like living away from family and work life and the need to save time and effort. The technology has provided a suitable solution through electronic delivery. Studies have shown that customer electronic purchasing is affected by many factors, such as marketing factors, cultural factors and technological factors (Altarifi et al., 2015) and behavioral factors such as consumers' attitudes towards electronic purchasing (Tariqa et al., 2022; Al-Quran et al., 2020; Eldahamsheh et al., 2021; Al-Hawary & Obiadat, 2021; Zendeheel & Paim, 2012). These days, smartphone applications are spreading for food ordering purposes, and a significant increase is expected in 2022 in the use of these applications (Chai & Yat, 2019). In 2020, global revenues from online food delivery reached about 2 million US dollars, noting that the age group most used for online food delivery are young people (18-34 years old) (Partridge et al., 2021). There are many factors affecting the increase in demand for online food delivery, and among these factors are the development and increasing spread of smartphone applications, and customer need for ready and quick meals after work (Chai & Yat, 2019). In addition to the ease of use of applications, saving time and effort, flexibility of payment, providing continuous support to customers and receiving complaints in order to improve the delivery service and offering offers or loyalty points to customers are also important factors (Gupta, 2019). The COVID19 pandemic, which led to the ban, government closures and social distancing, also contributed to the increased use of online food delivery system (Partridge et al., 2021).

* Corresponding author.

E-mail address: dr_sliman73@aabu.edu.jo (S. Al-Hawary)

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Despite the growing market for food delivery online, the studies that examined the factors affecting it are still few, and accordingly the current study has conducted by focusing on marketing, behavioral, and technological factors as the most common drivers on previous studies on Jordanian business environment.

2. Literature review and hypotheses

2.1 Online food delivery

Online food delivery is defined as website or smartphone applications that enable customers to order and receive meals from restaurants through companies that provide freelancer services (Partridge et al., 2021). It is distinguished from traditional food delivery in several aspects, including that the service in the first type is around the clock and the delivery time is faster (Çavuşoğlu, 2012). One of the most important reasons that researchers study online food delivery is that it affects customers' satisfaction and loyalty (Yusra & Agus, 2020). In terms of the factors influencing the trend towards online food delivery, it is clear from a review of the theoretical literature that there are many factors mentioned by the researchers. In their study on the determinants of electronic shopping, Altarifi et al. (2015) recognized three key determinants of electronic shopping, which are marketing, cultural, and technological determinants. Lee et al. (2017) studied the determinants of customer use of food deliver applications such as customer perceived usefulness and system quality. Other drivers include eclectic choices of restaurants and food as well as marketing offers and bounces (Vinish et al., 2021). According to Altarifi et al. (2015), marketing determinants are factors related to economic and environmental aspects, advertising methods, and satisfaction, while cultural determinants are factors related to beliefs, customs, traditions, ethics, social class, and confidence, and technological determinants are factors related to electronic payments, website quality, security, privacy, and language. Table 1 provides a summary of online food delivery drivers categorized under technological, marketing, and behavioral drivers.

Table 1
Drivers of online food delivery orientation in the literature

| Drivers | Examples | Authors |
|-----------------------|--|--|
| Technological drivers | Payment choices, application quality, security and privacy, system language, system quality, firm and user-generated information, information quality, | Altarifi et al. (2015), Chai and Yat (2019), Zendeudel & Paim (2012), Prabowo and Nugroho (2019), Lee et al. (2017), Vinish et al. (2021), Suhartanto et al. (2019), Lee et al. (2019) |
| Marketing drivers | Advertising methods, customer satisfaction, offers and discounts, service quality, eclectic choices of restaurants. | |
| Behavioral drivers | Convenience motivation, perceived trust, perceived relative advantage of system, social influence, time saving. | |

2.2 A Conceptual framework and Research hypotheses development

Scholars emphasized numerous drivers of online food delivery. Altarifi et al. (2015) examined the effect of electronic shopping on customer purchasing decisions using a sample consisting of online shoppers and found that cultural and technological determinants, but not marketing determinants, have significant effects on customer purchasing decisions. Zendeudel and Paim (2012) indicated that customer online purchase is significantly influenced by factors such as service relative advantage, compatibility, complexity, and perceived trust. Chai and Yat (2019) recognized three key factors that affect customer behavioral intentions toward online food delivery systems, which are time saving, convenience motivation, as well as security and privacy. Saving time is one of the most important factors that encourage consumers to buy online, as well as security and privacy, as some consumers avoid buying online because of fear for personal data, but time and effort that the consumer saves helps to use online food delivery. The authors' regarded customer behavioral intention as a significant predictor of online food delivery adoption. Other studies (e.g., Suhartanto et al., 2019) indicated that delivery service quality had no significant impact on customer loyalty to online food delivery systems. For Lee et al. (2017), the most significant determinants of customer perceived usefulness of food delivery applications are system quality, firm generated information, and user generated information. Investigating the antecedents of customers' behavioral intention to use online food delivery, Vinish et al. (2021) highlighted the importance of several factors like food customization, offers and discounts, delivery tracking, payment options, payment security and privacy, faster delivery, eclectic choices of restaurants, saving time for other works, freedom of cooking, and wide choices of food. Lee et al. (2019) indicated that customer intention toward food delivery applications, if mostly affected by habit, is a result of social influence, performance expectancy, and information quality. Selecting a sample consisting of the users of one mobile application of food delivery, Prabowo and Nugroho (2019) indicated that customer behavioral intention is influenced by hedonic (fun) motivation and time saving orientation. This study emphasized the role of convenience motivation as a driver of online food delivery systems. Other determinants cited include efforts and performance expectancy, social influence, technology fit, and safety. For the current study, electronic payments as well as security and privacy characterize technological factors (Altarifi et al., 2015). Offers and discounts, service quality, and eclectic choices of restaurants typify marketing drivers (Chai & Yat, 2019; Vinish et al., 2021), while time saving and convenience motivation represent two main aspects of the behavioral determinants (Prabowo & Nugroho, 2019; Chai & Yat, 2019). Based on the above-mentioned literature, a conceptual model is developed and proposes that the online food delivery (OFD) is a function of the selected three interrelated drivers; namely technological, marketing, and behavioral and the expected relationships are exhibited in Fig. 1. It illustrates that this research intends to test three hypotheses; the effect of technological drivers (TD) on online food delivery (OFD) as in the first hypothesis (H1), marketing drivers (MD) on OFD as a second hypothesis (H2), and behavioral drivers (BD) on OFD in the third hypothesis (H3).

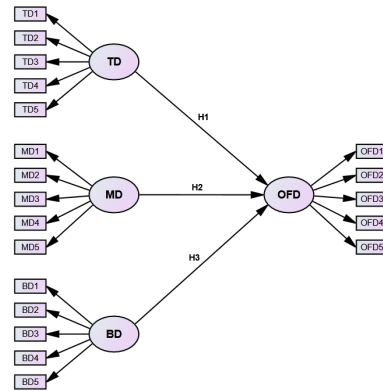


Fig. 1. Research conceptual model

These hypotheses are stated as follows:

H₁: *Technological drivers are positively related to OFD orientation.*

H₂: *Behavioral drivers are positively related to OFD orientation.*

H₃: *Marketing drivers are positively related to OFD orientation.*

3. Research methodology

3.1 Research sample

The sample of this research encompassed 215 customers of those who used online food delivery applications via their smartphones. They were selected based on convenience sampling techniques. Inclusion criteria were to use online food delivery applications to order meals from restaurants. Online questionnaire was delivered to the sample members with a message to encourage a high response rate. The final total number of the returned questionnaires was 154 responses. IBM SPSS 25.0 and AMOS 23.0 were used to analyze the available data.

3.2 Research measures

Technological, marketing, and behavioral drivers (15 items) as well as online food delivery (5 items) were measured based on previous studies (e.g., Altarifi et al., 2015; Lee et al., 2019; Chai & Yat, 2019; Vinish et al., 2021). Users of online food delivery applications were asked to rate the degree to which these drivers are linked to their orientation toward online food delivery using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

4. Data analysis and results

4.1 Validity and reliability

Factor loadings and average variance extracted (AVE) were used to test validity and Cronbach’s alpha (α) along with composite reliability (CR) were utilized to test reliability.

Table 2
Validity and reliability results

| Variables | Items | Factor Loadings | AVE | CR | α |
|----------------------------|-------|-----------------|-------|-------|----------|
| Technological drivers (TD) | TD1 | 0.851 | 0.690 | 0.917 | 0.899 |
| | TD2 | 0.921 | | | |
| | TD3 | 0.773 | | | |
| | TD4 | 0.822 | | | |
| | TD5 | 0.777 | | | |
| Marketing drivers (MD) | MD1 | 0.838 | 0.678 | 0.913 | 0.910 |
| | MD2 | 0.901 | | | |
| | MD3 | 0.764 | | | |
| | MD4 | 0.812 | | | |
| | MD5 | 0.797 | | | |
| Behavioral drivers (BD) | BD1 | 0.881 | 0.704 | 0.922 | 0.914 |
| | BD2 | 0.745 | | | |
| | BD3 | 0.799 | | | |
| | BD4 | 0.811 | | | |
| | BD5 | 0.944 | | | |
| Online food delivery (OFD) | OFD1 | 0.911 | 0.707 | 0.923 | 0.917 |
| | OFD2 | 0.937 | | | |
| | OFD3 | 0.753 | | | |
| | OFD4 | 0.741 | | | |
| | OFD5 | 0.844 | | | |

Factor loadings should be greater than 0.50 (Al-Hawary & Hussien, 2017), AVE values should be higher than 0.50 (AlTaweel & Al-Hawary, 2021), while alpha coefficients and CR values should be more than 0.70 (Mohammad et al., 2020; Al-Hawary & Al-Syasneh, 2020). Table 2 documents acceptable values of validity and reliability.

4.2 Model fit

Model fit was calculated based on four indices: Chi-square-to-degree of freedom ratio (CMIN/DF), the Goodness of Fit Index (GFI), the Comparative Fit Index (CFI), and the Root Mean Squared Approximation of Error (RMSEA). The following criteria were used as threshold values for these indices: CMIN/DF < 3, GFI and CFI > 0.90, and RMSEA < 0.08 (Alolayyan et al., 2018; Lee et al., 2019). Multicollinearity was tested by the variance inflation factor (VIF) and tolerance VIF values were less than 10 and tolerance values were greater than 0.10 (Altarifi et al., 2015). The results in Table 3 indicate that all model fit indices were greater the cut-off values and the current data had no multicollinearity problem.

Table 3
Model fit and collinearity results

| Index | Model fit indices | | | Collinearity statistics | | |
|---------|-------------------|----------|----------|-------------------------|-----------|----------|
| | Value | Criteria | Result | VIF | tolerance | Result |
| CMIN/DF | 2.381 | < 3.00 | Accepted | 1.317 | 0.715 | Accepted |
| GFI | 0.924 | > 0.90 | Accepted | 1.429 | 0.700 | Accepted |
| CFI | 0.964 | > 0.90 | Accepted | 1.225 | 0.761 | Accepted |
| RMSEA | 0.072 | < 0.08 | Accepted | 1.342 | 0.796 | Accepted |

4.3 Descriptive statistics and correlation matrix

The results in Table 3 show that the degrees of the research variables are high with mean values greater than 3.68 and significantly correlated to each other with correlation coefficients between 0.341 and 0.553, which means that there are significant correlations between technological, marketing, and behavioral drivers and online food delivery. In order to explore the effective relationships between these variables a further step of analysis is required.

Table 4
Descriptive statistics and correlation matrix

| Constructs | Mean | SD | (1) | (2) | (3) | (4) |
|-----------------------|------|-------|---------|----------|---------|-----|
| Technological drivers | 3.69 | 0.741 | 1 | | | |
| Marketing drivers | 3.72 | 0.684 | 0.341** | 1 | | |
| Behavioral drivers | 3.77 | 0.753 | 0.552** | 0.387** | 1 | |
| Online food delivery | 3.81 | 0.827 | 0.415** | 0.3096** | 0.432** | 1 |

** Correlation is significant at the 0.01 level (2-tailed).

5. Hypotheses testing

The structural model as displayed in Fig. 2 illustrates the effects of the dependent variables (technological, marketing, and behavioral drivers) on the dependent one (online food delivery). The effect of TD on OFD was assumed in H1, the effect of MD on OFD was hypothesized in H2, and the effect of BD on OFD was suggested in H3.

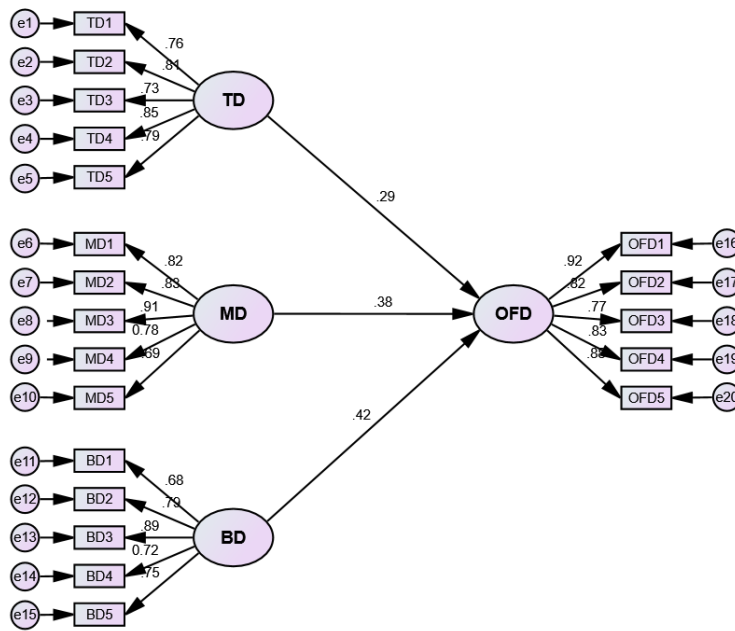


Fig. 2. Research structural model

The results of hypotheses testing as documented in Table 5 indicated that the technological drivers had a significant and positive effect on online food delivery ($\beta = 0.291$, C.R. = 3.005, $P < 0.05$). Moreover, marketing drivers had a significant and positive effect on online food delivery ($\beta = 0.339$, C.R. = 2.634, $P < 0.05$). Similarly, behavioral drivers had a significant and positive effect on online food delivery ($\beta = 0.453$, C.R. = 3.871, $P < 0.05$). It can be noted that the behavioral drivers had the largest effect followed by the marketing drivers.

Table 4
Results of hypotheses testing

| Hypotheses | Paths | Estimate | S.E. | C.R. | P |
|------------|----------|----------|-------|-------|-------|
| H1 | TD → OFD | 0.291 | 0.152 | 3.005 | 0.004 |
| H2 | MD → OFD | 0.339 | 0.065 | 2.634 | 0.007 |
| H5 | BD → OFD | 0.453 | 0.130 | 3.871 | 0.000 |

6. Discussion, conclusion and recommendations

The study aimed at exploring the drivers of online food delivery. Three key factors were chosen to determine their effects on online food delivery. Based on the literature review, such factors were categorized as technological, marketing, and behavioral drivers, hence three hypotheses were suggested (H1, H2, and H3). These hypotheses assumed that technological, marketing, and behavioral drivers are significantly and positively related to online food delivery. These hypotheses were supported. That is, technological, marketing, and behavioral drivers are significant and positive drivers of online food delivery. In line with these results, previous studies indicated that data and payment security and privacy, system quality, perceived usefulness of food delivery applications technology fit are significant technological drivers of online food delivery (Altarifi et al., 2015; Zendehele & Paim, 2012; Lee et al., 2017; Vinish et al., 2021). Furthermore, advertising methods, offers and discounts, delivery tracking, eclectic choices of restaurants, and wide choices of food are significant marketing drivers of online food delivery (Altarifi et al., 2015; Vinish et al., 2021). Similarly, saving time for other activities, performance expectancy, and convenience motivation (Chai and Yat, 2019; Vinish et al., 2021; Prabowo & Nugroho, 2019).

These results can be explained as follows. Behavioral factors motivate the use of online food delivery because the user considers it appropriate in terms of saving effort and time, which means that time and effort can be invested in other activities. However, these factors alone are not sufficient to explain the reason for moving towards online food delivery. The study has shown that marketing factors such as advertising methods, offers and discounts when ordering online, and the quality of delivery service lead to the use of online food delivery. On the other hand, technological factors such as the internet, smart phones and the quality of the applications used encourage the use of online food delivery. In light of the foregoing, the study concluded that online food delivery as a multi-dimensional variable is affected by several factors, including technological, marketing, and behavioral drivers. The current study dealt with technological, marketing, and behavioral drivers, and there may be other factors affecting the food that the researchers are required to identify. Companies are also required to pay attention to these factors in order to improve the efficiency of online food delivery.

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