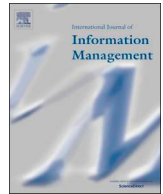




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# Mobile food ordering apps: An empirical study of the factors affecting customer e-satisfaction and continued intention to reuse

Ali Abdallah Alalwan

Al-Balqa Applied University, Amman College of Banking and Financial Sciences, Amman, Salt, 19117, Jordan



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## ABSTRACT

Mobile food ordering apps (MFOAs) have been widely considered in the restaurant sector as innovative channels to reach customers and provide them with high-quality services. However, there are important questions regarding the impact of implementing MFOAs on customer satisfaction and on customers' intention to reuse such apps. Several studies have examined the outcomes of using MFOAs from the customer's perspective. The fundamental purpose of this study is to identify and empirically examine the main factors predicting the e-satisfaction with MFOAs and customers' intention to reuse such apps in Jordan. This research proposes an integrated model based on the extended Unified Theory of Acceptance and Use of Technology (UTAUT2) and the features of MFOAs: online review, online rating, and online tracking. The data was collected from a convenience sample of Jordanian customers who have used MFOAs. The main results are based on structural equation modelling and support the role of online review, online rating, online tracking, performance expectancy, hedonic motivation, and price value on e-satisfaction and continued intention to reuse. This study provides a theoretical contribution and presents practical implications relevant to academics and practitioners working in areas related to MFOAs.

## 1. Introduction

Given the rapid development of information communication technology (ICT) and smartphones, smart technologies and mobile application (app) software have become an extensive and integral part of everyday life (Baabdullah, Alalwan, Rana, Patil, & Dwivedi, 2019; Dwivedi, Shareef, Simintiras, Lal, & Weerakkody, 2016; Lal & Dwivedi, 2009; Lu, Wu, & Hsiao, 2019; Malaquias & Hwang, 2019; Shareef, Archer, & Dwivedi, 2012; Shareef, Kumar, Dwivedi, & Kumar, 2016; Ismagilova, Hughes, Dwivedi, & Raman, 2019). Mobile apps are built and designed to be downloaded and used via smartphones or similar mobile platforms (e.g., iPads, tablets). In the first quarter of 2017, the number of apps globally available to be downloaded was about 2.2 million for Apple's App Store and 2.8 million for Google's Play Store (Statista, 2018a), and users had downloaded more than 178.1 billion apps on their mobile devices by 2017, a figure that is predicted to increase to 258.2 billion by 2022 (Statista, 2018b).

Among the most popular mobile apps that have recently been developed by service organizations in Jordan are mobile online food ordering apps (MFOAs). For example, 718 Jordanian restaurants had joined the Talabat MFOA and had started taking orders from customers in Amman by the end of 2018 (Talabat, 2017). Jordanian restaurants have started to consider mobile commerce applications as new

mechanisms either to attract new customers or to maintain current customers' satisfaction and loyalty, especially given the intense competition in a sector that comprises more than 20,000 restaurants (Almadenahnews, 2018). Furthermore, the development of interactive technologies has led to customers being more active and engaged in different commercial activities, such as gathering information, comparing alternatives, purchasing, and providing reviews (Carlson, Rahman, Taylor, & Voola, 2019; Thakur, 2016; Yang, Lin, Carlson, & Ross, 2016; Yang, Asaad, & Dwivedi, 2017). Consequently, Jordanian restaurants are looking to build their brand recognition and equity through these apps (Hew, Lee, Ooi, & Lin, 2016).

The selection of Jordan as the context for conducting the empirical part of the current study was because MFOAs are a promising sector in Jordan by comparison with other neighbouring countries. In the Jordanian market, for example, the total number of mobile subscriptions by the end of 2015 had reached 11 million, with a penetration rate of about 147 per cent (The Jordan Times, 2014a, 2014b). About 95 per cent of the Jordanian population had mobile subscriptions, and among them about 38 per cent used smartphones to access mobile and Internet services (The Jordan Times, 2014a, 2014b). According to a study by the Arab Advisers Group, however, although most (98 per cent) owners of smartphones used mobile apps, about 31 per cent of smartphone users were not fully aware of the nature and benefits of such novel systems,

E-mail address: [Alwan\\_jo@bau.edu.jo](mailto:Alwan_jo@bau.edu.jo).

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with social media apps being the most commonly downloaded (*The Jordan Times*, 2014a, 2014b).

MFOAs can be defined as mobile apps that smartphone users download and use as an innovative and convenient channel to access restaurants, view food menus, place food orders, and make payments without any physical interaction with restaurant staff (*Okumus & Bilgihan, 2014; Wang, Tseng, Wang, Shih, & Chan, 2019*). According to a 2015 report, food apps were the second most downloaded app by Apple iOS users (*Ariel, 2015*). A recent report by Boston Consulting Group found that about 60 per cent of food catering customers had already adopted at least one MFOA (*BCG, 2017*).

By using these apps, customers are able more easily and effectively to access and order their food from a wide range of restaurants at times and locations convenient to the users. Such apps also provide customers with more comprehensive, up-to-date, and accurate information about the restaurants and the menu options. Accompanying this information is the ability for customers to see their order progress through all its stages (*Aksenova, 2017; Algharabat, Alalwan, Rana, & Dwivedi, 2017; Lu & Rastrick, 2014; Marriott, Williams, & Dwivedi, 2017; Nilashi, Ibrahim, Mirabi, Ebrahimi, & Zare, 2015*). Online food ordering apps consist of various innovative characteristics that help both customers and restaurants override problems like long waiting times, traffic, miscommunication, delayed delivery, or dealing with customer complaints.

Even though online food ordering apps have been attracting considerable interest in Jordan and other countries in the region, the related issues of these apps have not been fully studied and tested by academics and researchers. As such apps have only recently been introduced in Jordan, there is a need to examine which aspects could shape customers' perception, intention, and behaviour towards them. Furthermore, because most previous studies of mobile apps in general and MFOAs in particular have simply addressed aspects related to customer intention and initial adoption, this study will go further by considering e-satisfaction and customers' continued intention to reuse, especially given that most MFOAs are popular and well adopted by customers (*Kapoor & Vij, 2018; Statista, 2018b*).

Therefore, the key question addressed by this research relates to the impact of these applications on the customers' experience in terms of satisfaction and continued intention to reuse. To answer this question, this study proposes a model that can both cover dimensions related to most features of mobile apps and address the most important aspects from the perspective of Jordanian customers. Thus, this study will empirically test this model in a Jordanian context.

The rest of the paper is organized as follow: the next section presents an overview of the main themes covered by prior literature, which is followed by a section that discusses and explains the conceptual model and the research hypotheses. Section four presents the methodology and section five the empirical results. The results are discussed in depth in section six through a consideration of their theoretical contribution and practical implications. The final section presents a research conclusion, limitations, and future research directions.

## 2. Literature review

Although MFOAs are common systems adopted by the restaurant sector worldwide, academic interest in examining issues related to MFOAs is still in its early stages (*Okumus & Bilgihan, 2014; Wang, Tseng et al., 2019*). Careful analysis reveals a number of themes considered by prior MFOA studies. The most common theme relates to examining such novel apps from the customer's perspective. For instance, in a qualitative study that attempted to discover the main aspects that could motivate Brazilian customers' adoption of MFOAs, *Pigatto, Machado, Negreti, and Machado (2017)* indicated the importance of content, usability, and functionality on the usage of such online ordering systems.

Researchers have also considered another theme pertaining to the

main drivers of the user acceptance of MFOAs. In this regard, *Okumus and Bilgihan (2014)* attempted a first theoretical contribution based on the Technology Acceptance Model (TAM) by proposing a number of factors (namely, perceived enjoyment, perceived usefulness, social norms, self-efficacy, and perceived ease of use) as key predictors of a customer's willingness to use MFOAs. Likewise, in a study on US customers' willingness to use mobile diet apps, *Okumus, Ali, Bilgihan, and Ozturk (2018)* formulated a conceptual model based on the Unified Theory of Acceptance and Use of Technology (UTAUT). They tested whether innovativeness was a moderating effect on the main associations between UTAUT factors and intention to use mobile diet apps. Their findings largely supported the roles of performance expectancy, effort expectancy, and social influence. However, the moderating influence of innovativeness was not supported.

To identify the main predictors of customer's continued intention to use online food ordering systems, *Yeo, Goh, and Rezaei (2017)* built their model based on the Contingency Framework and Extended Model of IT Continuance. They found that as long as customers perceive that using such online food ordering systems is fun and entertaining, they regard them as useful and as making their daily life much easier, and hence they are more likely to form more positive attitudes and to be willing to continue using these applications. The authors also confirmed the important impact of online food systems' ability to save customers' time and money on the customers' perception of usefulness and ease of use.

Customers' attitudes towards MFOAs has been an important theme considered by a number of researchers. An empirical study in China conducted by *Cho, Bonn, and Li (2019)* found that perceived value and customers' attitudes towards food delivery apps are largely shaped by the level of trust, design, and product verity, and that significant differences in the customers' perception of such apps were observed between single-person families and multi-person families. The research by *Alagoz and Hekimoglu (2012)* on online food ordering found that factors like usefulness, innovativeness, and trust shaped customers' attitudes towards MFOAs.

Some researchers (*Kapoor & Vij, 2018; Wang, Tseng et al., 2019*) have focused on the outcomes of using MFOAs – namely, satisfaction, customer experience, and customer conversion. In their study, *Wang, Tseng et al. (2019)* proposed a model based on the IS Success model to predict the main outcomes of customers' use of mobile catering apps. They found that customers are more likely to positively value such apps and to be satisfied about their experience of using mobile catering apps if they perceive an adequate level of quality in terms of information, services, system and product. *Kapoor and Vij (2018)*, using data from a questionnaire and focus groups, provided further quantitative and qualitative evidence about the important impact of mobile apps features – namely, visual design, information design, navigational design, and collaboration design – on the level of customer conversion.

*Table 1* summarizes the studies that have focused on online or mobile food ordering applications. Some of these studies examined online (website) food ordering systems (i.e., *Alagoz & Hekimoglu, 2012; Pigatto et al., 2017; Yeo et al., 2017*), and four concentrated on MFOAs (*Cho et al., 2019; Okumus & Bilgihan, 2014; Okumus et al., 2018; Wang, Tseng et al., 2019*).

Further research is required to discover the main dimensions that could hinder or contribute to the successful implementation of MFOAs. Moreover, to the best of the researcher's knowledge, MFOAs have never been explored or addressed either in Arab countries in general or in Jordan in particular. Accordingly, it is worth researching how such applications could impact on customers' perception and satisfaction in Arab countries like Jordan.

Customers' habitual behaviour, either in terms of using smartphones and the attached apps or in terms of ordering food from restaurants, could be a very critical component in shaping customer intention and behaviour towards MFOAs (*Alalwan, Dwivedi, Rana, & Algharabat, 2018; Davis & Venkatesh, 2004; Eriksson, Kerem, & Nilsson, 2008*).

**Table 1**  
Studies of Food Ordering Apps.

| Study                       | Methodology and Data Instrument Used         | Factors Tested  | Theory Adopted   | Context   |
|-----------------------------|--|---|--|---|
| Okumus et al. (2018)        | Self-administered online questionnaire       | <b>Independent factors:</b> performance expectancy; effort expectancy; social influence; facilitating conditions<br><b>Moderating factors:</b> innovativeness<br><b>Dependent factors:</b> intention to use mobile diet apps<br><b>Independent factors:</b> information quality, system quality; service quality; product quality; perceived promotion; perceived price<br><b>Dependent factors:</b> perceived value; user satisfaction; EWOM; intention to reuse<br><b>Independent factors:</b> perceived enjoyment; perceived usefulness; social norms; self-efficacy; perceived ease of use<br><b>Dependent factors:</b> Intention to use; actual use<br><b>Moderating factors:</b> Technical barriers<br><b>Independent factors:</b> convenience; design; trustworthiness; price; various food choices<br><b>Dependent factors:</b> perceived value; attitudes; intention to reuse<br><b>Moderating factors:</b> single-person households; multi-person households<br><b>Independent factors:</b> ease of use, usefulness; innovativeness; trust<br><b>Dependent factors:</b> attitudes; customer's intention<br><b>Independent factors:</b> Visual design; information design; navigational design; collaboration design<br>Dependent factors: conversion<br><b>Independent factors:</b> Content; usability; functionality<br><b>Dependent factors:</b> website usage<br><b>Independent factors:</b> attitude, convenience; hedonic motivations; prior online purchase experience; price saving orientation<br><b>Dependent factors:</b> post-usage usefulness; attitudes; intention | UTAUT<br>IS Success model<br>TAM<br>Quality attributes<br>TAM<br>Mobile app attributes | US: Mobile diet apps<br>Taiwan: Mobile catering app<br>Mobile food ordering apps<br>China: Food delivery apps<br>Turkey: Online food ordering<br>India: Online food-delivery aggregator<br>Brazil: Online food ordering website<br>Malaysia: Online food delivery |
| Wang, Tseng et al. (2019)   | Questionnaire                                |   |  |   |
| Okumus and Bilgihan (2014)  | Conceptual paper                             |   |  |   |
| Cho et al. (2019)           | Questionnaire                                |   |  |   |
| Alagoz and Hekimoglu (2012) | Offline survey                               |   |  |   |
| Kapoor and Vij (2018)       | Mixed methods: questionnaire and focus group |   |  |   |
| Pigatto et al. (2017)       | Qualitative exploratory method               |   |  |   |
| Yeo et al. (2017)           | Questionnaires                               |   |  |   |

Nevertheless, habit has not been fully considered by prior studies of MFOAs. Thus, there is a need to consider and validate the impact of this construct in shaping the customer's behaviour towards MFOAs in Jordan.

More importantly, there is a consensus in the prior literature on mobile commerce that innovative features of mobile technology, such as online rating, online review, and online tracking, play an important role. However, in research on MFOAs, online tracking has been examined in only one study (Kapoor & Vij, 2018) in terms of navigation, while the impact of both online rating and online review have not been covered at all by previous research on MFOAs. Research is needed to explore how these aspects might predict the customer's perception of the usefulness and value of using MFOAs, as well as their impact on customer satisfaction and continued intention to reuse.

This study intends to fill this research gap related to MFOAs by proposing and empirically validating a model able to capture the most important aspects related to the Jordanian customer's perspective, as well as by considering the most important mobile commerce features, such as online rating, online review, and online tracking.

### 3. Conceptual model

In their attempts to validate the main factors influencing the customers' perception, intention, and actual behaviour with online and mobile food ordering systems, researchers have adopted different theories and models, such as the Contingency Framework and Extended Model of IT Continuance (Yeo et al., 2017), mobile app attributes (Kapoor & Vij, 2018); TAM (Alagöz & Hekimoglu, 2012; Okumus & Bilgihan, 2014), quality attributes (Cho et al., 2019), UTAUT (Okumus et al., 2018), and the IS Success model (Wang, Tseng et al., 2019). A careful examination of most of the theories and models adopted by these studies reveals the importance of considering a theoretical foundation suited to the customer's perspective (Rana, Dwivedi, Williams, & Weerakkody, 2016; Venkatesh, Thong, & Xu, 2012). Thus, the extended UTAUT (UTAUT2) was adopted in the current study as a theoretical foundation for the proposed conceptual model. As argued by Venkatesh et al. (2012), UTAUT2 was developed to validate the predictors of behavioural intention and adoption from the customer's perspective. UTAUT2 covers the main constructs that have been approved by prior studies on MFOAs, such as performance expectancy, effort expectancy, social influence, price value, hedonic motivation, and habit (Okumus et al., 2018), as suggested by Venkatesh et al. (2012), which will be proposed in the current study's model. Further, three other constructs associated with mobile app features (online tracking, online rating, and online reviewing) will be included in the same model.

Fig. 1 shows the seven factors (performance expectancy; effort expectancy; social influence; facilitating conditions; price value; hedonic motivation; and habit), as suggested by Venkatesh et al. (2012), which will be proposed in the current study's model. Further, three other constructs associated with mobile app features (online tracking, online rating, and online reviewing) will be included in the same model.

#### 3.1. Performance expectancy (PE)

Customers' perception of the main utilities and benefits of using new technical products and services has repeatedly been confirmed to have an impact on behavioural intention and actual adoption of new technological products and services (Alalwan, Dwivedi et al., 2017; Rana et al., 2016; Shareef, Baabdullah, Dutta, Kumar, & Dwivedi, 2018; Venkatesh, Morris, Davis, & Davis, 2003). Performance expectancy refers to the ability of the new system and application to help customers

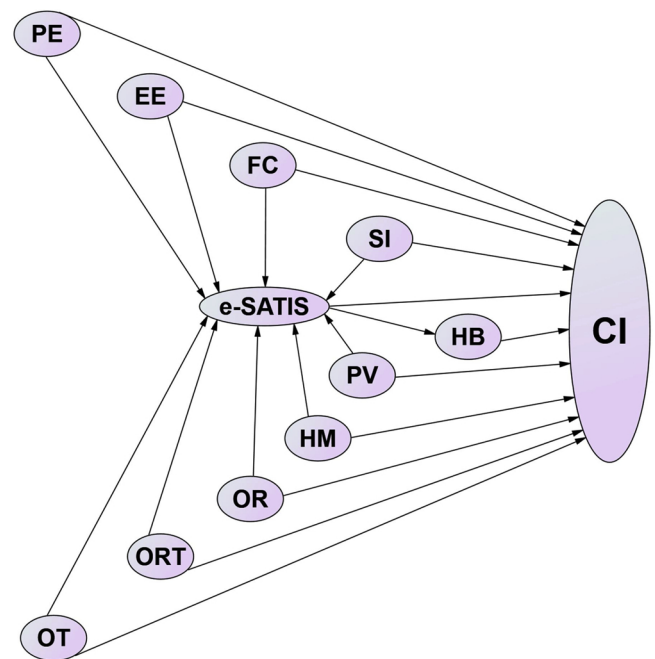


Fig. 1. Conceptual model, adapted from Venkatesh et al. (2012) and Filieri (2015).

attain what they need and want in a more convenient and productive way (Venkatesh et al., 2003). Customers are more likely to have a positive reaction and intention towards using a new system if they perceive that the system will save them more time and effort than traditional ones do (Dwivedi, Rana, Janssen et al., 2017; Dwivedi, Rana, Jeyaraj, Clement, & Williams, 2017; Sharma & Sharma, 2019; Tamilmani et al., 2019; Venkatesh et al., 2003). Okumus et al. (2018) provided statistical evidence supporting the significant role of performance expectancy in contributing to the customer's intention to use mobile food apps. Usefulness, as a similar factor to performance expectancy, was found by Yeo et al. (2017) to have a significant impact on the customer's intention to use online food ordering systems. Accordingly, the following hypothesis is proposed:

**H1.** Performance expectancy will positively impact Jordanian customers' continued intention to reuse MFOAs.

In relation to MFOAs, latent characteristics of mobility and flexibility provide customers with more convenience in interacting with restaurants. For example, by using a MFOA, a customer can access any restaurant at any time and on any day of the week, have a wide variety of food options, collect sufficient information, and place their orders without needing to physically move (Cho et al., 2019; Okumus & Bilgihan, 2014; Shaw & Sergueeva, 2019; Wang, Tseng et al., 2019). MFOAs are especially important given such problems as traffic, car parking, and long waiting times at restaurants. Therefore, it could be argued that a customer is more likely to be satisfied and pleased about his or her experience of using MFOAs if they perceive a high level of utilitarian value in using such innovative apps. Thus, the following hypothesis is proposed:

**H2.** Performance expectancy will positively impact Jordanian customers' e-satisfaction with MFOAs.

#### 3.2. Effort expectancy (EE)

Customers have consistently been observed to pay particular attention to the extent to which using a new system is easy and requires less effort (Alalwan, Dwivedi et al., 2017). Therefore, effort expectancy,

as termed by Venkatesh et al. (2003), or ease of use, as termed by Davis, Bagozzi, and Warshaw (1989), is a vital component in most studies on technology acceptance and innovation diffusion (Alagoz & Hekimoglu, 2012; Alalwan, Dwivedi, Rana, & Williams, 2016; Okumus & Bilgihan, 2014). MFOAs require customers to complete all the processes of food ordering without any help or assistance from restaurant staff. Thus, customer intention to use MFOAs could be shaped by the extent to which a customer perceives that using MFOAs is easy and uncomplicated. In line with this proposition, Okumus et al. (2018) empirically proved the significant impact of effort expectancy on the customer's intention to use MFOAs. Thus, the following hypothesis suggests that:

**H3.** Effort expectancy will positively impact Jordanian customers' continued intention to reuse MFOAs.

The complexity and ease of use of MFOAs could also be reflected in the time and effort required from customers. Accordingly, it can be proposed that as long as customers perceive using MFOAs is low in effort and complexity, they will be pleased with their experience of using such apps. Kaewkitipong, Chen, and Ractham (2016) largely supported this proposition about the impact of effort expectancy on students' satisfaction with an online learning area. In the mobile website area, a strong correlation was confirmed by Amin, Rezaei, and Abolghasemi (2014) between ease of use, effort expectancy and customer satisfaction. Likewise, Zhou (2011) provided further evidence regarding the impact of ease of use on the customer's satisfaction with mobile payment. Therefore, the following hypothesis suggests that:

**H4.** Effort expectancy will positively impact Jordanian customers' e-satisfaction with MFOAs.

### 3.3. Social influence (SI)

Social influence has been among the most important factors considered in relation to customers using or rejecting mobile commerce applications. Venkatesh et al. (2003, p. 450) conceptualized social influence as "the extent to which an individual perceives that important others believe he or she should apply the new system". Since MFOAs are new technology in Jordan, customers are not fully familiar with them; accordingly, they could be primarily influenced by others (friends, family, leaders, relatives, colleagues) whose opinions, thoughts, and attitudes are important to them (Alalwan, Dwivedi et al., 2017; Okumus et al., 2018). Indeed, customers are more likely to return to their social system either to acquire more information and enlarge their awareness or to have social approval for their decision to use a new system (Khalilzadeh, Ozturk, & Bilgihan, 2017; Verkijika, 2018). Several studies on mobile commerce have demonstrated the significant role of social influence. In a study on South Africa, Verkijika (2018) found that social influence has a role in predicting the customer's intention to use mobile commerce apps. Khalilzadeh et al. (2017) also found that social influence has a positive effect on intention to use mobile payment. With regard to MFOAs, Okumus et al. (2018) found that social influence has a role in predicting US customers' intention to use mobile diet apps. Hence, the following hypothesis can be proposed:

**H5.** Social influence will positively impact Jordanian customers' continued intention to reuse MFOAs.

It could also be argued that customers are more likely to be affected by those around them when judging their experience (satisfaction or dissatisfaction) of using MFOAs. Indeed, the social approval that customers could have from others regarding the usage of MFOAs will enhance the social values captured in using such systems, and, accordingly, the level of customer satisfaction (Gallarza & Saura, 2006). In line with this proposition, social influence was empirically proved by Hsiao, Chang, and Tang (2016) to have a significant role in shaping the user's satisfaction with mobile social apps. Hence, the following hypothesis

can be proposed:

**H6.** Social influence will positively impact Jordanian customers' e-satisfaction with MFOAs.

### 3.4. Facilitating conditions (FC)

Extent of use and consumer satisfaction with their experience of using modern applications largely depend on how much technical infrastructure and human support are available when required by customers (Venkatesh et al., 2003). From a technical perspective, MFOAs are a kind of software used with smartphones that could not be effectively adopted and used by customers without the availability of Internet or 4G services. Customers also pay considerable attention to the quality of these apps and their ability to work consistently without downtime or technical problems. In addition, the role of human support in terms of customer service, call centres, and delivery are critical for ensuring a high quality of service delivered to customers. Thus, facilitating conditions have been widely found by information technology and digital marketing researchers to have a crucial impact on the customer's intention and actual usage behaviour (e.g., Khalilzadeh et al., 2017; Verkijika, 2018). For example, Verkijika (2018) empirically validated the impact of facilitating conditions on the customer's intention to use mobile commerce. Similarly, Alalwan, Dwivedi et al. (2017) demonstrated a direct relationship between facilitating conditions and actual adoption of mobile banking in Jordan. Baabdullah, Alalwan, Rana, Kizgin, and Patil (2019) provided further evidence regarding the impact of facilitating conditions on customers' actual usage behaviour and satisfaction towards mobile banking in Saudi Arabia. Therefore, the following hypothesis is suggested:

**H7.** Facilitating conditions will positively impact Jordanian customers' continued intention to reuse MFOAs.

Given the potentially important role of facilitating conditions, it can also be proposed that if customers perceive an adequate level of technical, organizational, infrastructural, and human support when using MFOAs, they are more likely to have a simpler and more comfortable experience of using MFOAs, and, accordingly, will be more satisfied with using such apps. This association between facilitating conditions and customer satisfaction was empirically confirmed by Chan et al. (2010) in the area of e-government. Another strong relationship between facilitating conditions and satisfaction was also validated by Maillet, Mathieu, and Sicotte (2015) in relation to the health informatics context. Therefore, the following hypothesis is suggested:

**H8.** Facilitating conditions will positively impact Jordanian customers' e-satisfaction with MFOAs.

### 3.5. Price value (PV)

As discussed by Venkatesh et al. (2003), price value is among the main new aspects that differentiate UTAUT2 from UTAUT and make the UTAUT2 model more suitable to consumer markets. Price value is related to the financial aspects of using new products and systems. Customers are more likely to compare the benefits of using a new system with the financial cost paid (Alalwan, Dwivedi et al., 2017; Dodds, Monroe, & Grewal, 1991; Venkatesh et al., 2012). They are also expected to compare the cost of ordering food via traditional means with that via MFOAs. This suggests the importance of including price value as a key predictor of both continued intention and e-satisfaction. According to Venkatesh et al. (2012), price value was among the strongest factors contributing to the customer's continued use of mobile Internet services. The role of price value has also been demonstrated in Jordan by Alalwan, Dwivedi et al. (2017) in relation to mobile banking, and Shaw and Sergueeva (2019) provided evidence of the impact of price value on Canadian customers' intention to use mobile commerce. Thus,

the following hypothesis is proposed:

**H9.** Price value will positively impact Jordanian customers' continued intention to reuse MFOAs.

Furthermore, using MFOAs could save both financial and non-financial costs of ordering food from restaurants. For example, customers do not need to expend the physical energy and effort involved in actually visiting restaurants. Many restaurants provide their customers with discounts, coupons, points, free delivery, and sales promotions if they use MFOAs rather than visit the restaurants. Accordingly, Jordanian customers are more likely to be satisfied with their experience of these applications if the related benefits are perceived to be higher than the financial costs. In this regard, Oyedele, Saldivar, Hernandez, and Goenner (2018) addressed price value under the concept of economic value and found it to be a significant factor predicting customer intention towards using mobile smart wristbands. More recently, Iyer, Davari, and Mukherjee (2018) provided statistical evidence supporting the role of perceived value on customer satisfaction with mobile retailing apps. Thus, the following hypothesis is proposed:

**H10.** Price value will positively impact Jordanian customers' e-satisfaction with MFOAs.

### 3.6. Hedonic motivation (HM)

Along with extrinsic motivations (performance expectancy and perceived usefulness), intrinsic motivation has repeatedly been considered an important driver of the customer's intention and willingness to use new systems and applications (Alalwan, 2018; Brown & Venkatesh, 2005; Davis, Bagozzi, & Warshaw, 1992; Van der Heijden, 2004; Venkatesh et al., 2012). Conceptually, hedonic motivation can be articulated in terms of the intrinsic motivations (e.g., playfulness, enjoyment, fun, and pleasure) that can be derived from using new products, services, and applications; hence, such feelings of pleasure could be linked to the extent of the level of innovativeness and novelty in using new systems (Van der Heijden, 2004; Venkatesh et al., 2012). Indeed, mobile apps increasingly assume an important part of people's lifestyles worldwide. Moreover, apps such as MFOAs are perceived as being modern and creative (Yeo et al., 2017), which might lead to customers feeling pleasure and enjoyment when using such new applications (Okumus et al., 2018; Yeo et al., 2017). The role of hedonic motivation was found by Yeo et al. (2017) to positively shape customers' perceptions of the convenience and usefulness of online food delivery systems. Okumus and Bilgihan (2014) found that perceived enjoyment influences customers' willingness to adopt MFOAs. Thus, the following hypothesis is suggested:

**H11.** Hedonic motivation will positively impact Jordanian customers' continued intention to reuse MFOAs.

Furthermore, MFOA features empower customers to co-create value by providing feedback in online reviews and ratings of the services (See-To & Ho, 2014). Therefore, the customer is more likely to perceive his or her important role both for other customers and for service providers, which will accordingly increase their feeling of pleasure. Given the role of hedonic motivation discussed above, customers could be more satisfied with their usage experience if they perceive intrinsic motivation in using such apps. In this respect, Iyer et al. (2018) confirmed the role of hedonic value in contributing to the level of customers' satisfaction with mobile retailing apps. Similarly, Hsiao et al. (2016) supported the strong significant relationship between enjoyment and users' satisfaction with mobile social apps. Thus, the following hypothesis is suggested:

**H12.** Hedonic motivation will positively impact Jordanian customers' e-satisfaction with MFOAs.

### 3.7. Habit (HB)

Habit was the last construct added by Venkatesh et al. (2012) to the UTAUT2 model to provide an accurate picture of the customer's interactions with new systems. In line with Limayem, Hirt, and Cheung (2007), habit could be formulated as the customer's tendency to act spontaneously due to his or her accumulated learning experience. People are increasingly attached to their smartphones and have a habitual behaviour towards using the associated mobile apps. According to Ajzen and Fishbein (2005), the outcomes of such accumulated learning experience, and its formation of habitual behaviour, could impact customers' attitudes and beliefs, which, in turn, predict the customers' continued intention to behave in the same manner as previously. The role of habit has been shown in the area of mobile commerce and app adoption (e.g., Amoroso & Lim, 2017; Rana, Dwivedi, Lal, Williams, & Clement, 2017; Sun & Chi, 2018). Amoroso and Lim (2017) found that customers who are satisfied with their prior experience of mobile apps are more likely to form habitual behaviour towards such apps, and hence will be more willing to keep using these apps in future. Habit was also shown by Morosan and DeFranco (2016) to have a significant impact on the customer's intention to use mobile payments in the hotel sector. In Jordan, the role of habit was observed to predict the actual usage of Internet banking services (Alalwan et al., 2018).

In line with Venkatesh et al.'s (2012) proposition, it might be expected that Jordanian customers who form habitual behaviour towards MFOAs are more likely to keep using these apps in future. Thus, the following hypothesis proposes that:

**H13.** Habit will positively impact Jordanian customers' continued intention to reuse MFOAs.

### 3.8. Online review (OR)

The interactivity of MFOAs enables customers to create their own feedback about the restaurants they deal with and to share this feedback with other customers on the platforms used to order the food (Bert, Giacometti, Gualano, & Siliquini, 2014). In other words, online reviews provided by customers are a kind of word-of-mouth published via online platforms (Filiari, 2015; Mudambi & Schuff, 2010; Wei & Lu, 2013). Such reviews have been increasingly considered as important and valuable sources of information by customers when they are in the process of purchasing products or evaluating alternatives (Filiari, 2015; Huang, Baptista, & Newell, 2015; Simonson & Rosen, 2014). Therefore, the crucial impact of online reviews has been commonly found to predict customers' intention to adopt the targeted platform where such reviews are posted (Cheung, Lee, & Rabjohn, 2008). Elwaldal, Lü, and Ali (2016) found a strong and positive relationship between features discussed in online customer reviews (perceive usefulness, perceived ease of use, and enjoyment) and customers' intention to shop online. Thus, the following hypothesis proposes that:

**H14.** Online review will positively impact Jordanian customers' continued intention to reuse MFOAs.

Since they contain the comments of consumers, online reviews are normally perceived as having a high degree of credibility and trustworthiness, so customers generally return to such sources of information with regard to any products and services they would like to explore further (Filiari & McLeay, 2014; Filiari, 2015). As long as customers perceive such an information source as comprehensive, credible, updated, and relevant, they are more likely to have positive attitudes towards and perception of the platform (Algharabat, Rana, Dwivedi, Alalwan, & Qasem, 2018; Cheung et al., 2008; Filiari, 2015; Guo, Barnes, & Jia, 2017; Jiang & Benbasat, 2004; Mathwick & Mosteller, 2017). Furthermore, Mathwick and Mosteller (2017) showed that online reviews are an integral part of customers' engagement with online communities. Therefore, the following hypothesis proposes that:

**H15.** Online review will positively impact Jordanian customers' e-satisfaction with MFOAs.

### 3.9. Online rating (ORT)

A feature associated with online reviews is online customers' ratings. This concept was defined by [Filiari \(2015, p. 1264\)](#) as "another type of crowd opinion and indicates reviewers' average evaluation of the different features of a product or service". Along with submitting an online review, customers are able to numerically rate their shopping experience by using a five-point or seven-point Likert scale ([King, Racherla, & Bush, 2014](#); [Korfiatis, García-Bariocanal, & Sánchez-Alonso, 2012](#)). Such ratings help customers to capture an overall evaluation of products or service providers based on different features (e.g., quality, price, accuracy, and delivery time) that have been numerically valued by other customers who have already tried such products and services ([King et al., 2014](#)). This, in turn, makes the customers' purchasing process much easier and simpler, and, accordingly, customers could be more willing to use MFOAs if such interactivity is available. Thus, the following hypothesis theorizes that:

**H16.** Online rating will positively impact Jordanian customers' continued intention to reuse MFOAs.

Furthermore, online ratings give customers direct visual clues about the product's quality and performance, which, in turn, saves the customers' time and efforts, unlike qualitative online reviews which require much more time to read and analyse ([King et al., 2014](#); [Ludwig et al., 2013](#); [Qiu, Pang, & Lim, 2012](#); [Roy et al., 2018](#)). Online ratings also enable customers to specify a limited number of options to be considered, which allows them to appraise the shopping process more simply ([Filiari, 2015](#)). In light of the above, an online rating feature could play an important role in enhancing Jordanian customers' perception of the productivity and performance of MFOAs. Such a feature of MFOAs could motivate customers to continue using such apps, and to feel satisfied with their experience of using them. In this regard, a research study on amazon.com demonstrated a direct relationship between online features, such as linguistic style and star rating, and conversion rates ([Ludwig et al., 2013](#)). Online rating was also observed by [Pavlou and Dimoka \(2006\)](#) to have a crucial role not only in predicting customer trust in eBay.com but also in customers' purchase intention. The following hypothesis proposes that:

**H17.** Online rating will positively impact Jordanian customers' e-satisfaction with MFOAs.

### 3.10. Online tracking (OT)

Location-based services empowered by smartphone technology are one of the highly novel systems that enable both customers and sellers to "determine their precise location and, when linked to communication and computational components, [to] transmit locations and do location-based computations" ([Shugan, 2004, p. 473](#)). Location-based services usually comprise a number of features, such as friend finder, route guidance, location-aware directory services, navigation bar, payment status, tracking map, and tracking order status ([Gutierrez, O'Leary, Rana, Dwivedi, & Calle, 2018](#); [Pura, 2005](#)). Therefore, the availability of such innovative features on MFOAs could lead the customer to be more motivated to use such apps in the future. Therefore, the following hypothesis proposes that:

**H18.** Online tracking will positively impact Jordanian customers' continued intention to reuse MFOAs.

Such innovative features on MFOAs also save customers time and effort when they order food, and online tracking shows the customer's order at all stages, updating continuously about the state of the order

until it has been completed ([Gutierrez et al., 2018](#); [Lal & Dwivedi, 2008](#); [Kapoor & Vij, 2018](#)). In addition, customers are given more visual and innovative ways to track their order; accordingly, they may find their experience of using such apps more enjoyable and satisfying ([Yeo et al., 2017](#)). In view of this, an online tracking system could enrich the customer's shopping experience by making it more productive, pleasurable, and satisfying. Therefore, the following hypothesis proposes that:

**H19.** Online tracking will positively impact Jordanian customers' e-satisfaction with MFOAs.

### 3.11. E-satisfaction

This study adopts the definition of e-satisfaction proposed by [Anderson and Srinivasan \(2003, p. 125\)](#) which articulates e-satisfaction "as the contentment of the customer with respect to his or her prior purchasing experience with a given electronic commerce firm". In line with this definition, it could be argued that if the actual outcomes of using MFOAs match or exceed the customers' expectations, customers are more likely to be pleased about their experience. Accordingly, customers who are pleased about their experience with MFOAs are more motivated to continue using such apps. This proposition has recently been proved by [Wang, Tseng et al. \(2019\)](#) with regard to the adoption of a mobile catering app. Accordingly, the following hypothesis proposes that:

**H20.** E-satisfaction will positively impact Jordanian customers' continued intention to reuse MFOAs.

According to [Ajzen and Fishbein \(2005\)](#), the outcomes of customers' prior experience and interaction could shape their perception and attitudes, which, in turn, predicts their intention to act in the same manner. In the context of online retailing in the UK, [Christodoulides and Michaelidou \(2010\)](#) found that customers who are pleased about their experience of using online shopping are more likely to intend using such systems again and to be loyal towards such online stores. Furthermore, [Amoroso and Lim \(2017\)](#) proposed that as long as customers are satisfied about their experience of using MFOAs, they are expected to habitually reuse such applications. Thus, the following hypothesis proposes that:

**H21.** Jordanian customers' e-satisfaction will positively impact habit towards MFOAs.

## 4. Research methodology

The empirical part of this study was conducted in Jordan using a questionnaire survey ([Dwivedi, Choudrie, & Brinkman, 2006](#)). During the three months from September to December 2018, the required data was collected from a convenience sample size of 500 smartphone users who had already adopted and used MFOAs (i.e., Talabat, iFood, JU3AN, EatJo, Garcon, and Bilforon). The sample participants were approached in the three main cities in Jordan: Amman (four million residents), the capital and largest city; Irbid (1.7 million residents), the second largest city; and Aqaba (188,000 residents), the coastal and leading tourist city ([Alghad, 2016](#)). Another reason for selecting these three cities is that they are the three cities with the most restaurants in Jordan ([Almadenahnews, 2018](#)); most of Jordan's 20,000 restaurants can be found in Amman, Irbid, and Aqaba.

In the first part of the questionnaire, the main purpose of the study was explained, and MFOAs were clarified with examples (Talabat, iFood, JU3AN, EatJo, Garcon, and Bilforon). The second part was devoted to demographic questions, while the last part was for the main construct items. Seven-point Likert scales were adopted to measure the main scale items.

As seen in the Appendix A, [Venkatesh et al.'s \(2012\)](#) scale was

adopted to measure PE, EE, SI, FC, HM, PV, HB, and BI. E-satisfaction was validated using scale items extracted from Anderson and Sullivan (1993), Wang, Tseng et al. (2019) and Lee and Chung (2009). Items for OR were adapted from Park, Lee, and Han (2007), Jiang and Benbasat (2004), and Filieri (2015). ORT was tested from items suggested by Filieri (2015). OT items were self-developed for the purpose of this study.

As Arabic is the official language in Jordan, the questionnaire was translated into Arabic using the back-translation method recommended by Brislin (1976) to avoid the impact of cultural and linguistic differences. Moreover, the Arabic version of the questionnaire was checked by a panel of experts who are specialists in the area of digital marketing. A pilot study was also conducted with 25 Master's students in business at Al-Balqa Applied University. The vast majority of participants reported that the language used was very clear and understandable. To check the reliability of the constructs' scale used, Cronbach's alpha value was tested for all the constructs. All constructs were able to capture a value not less than 0.70 according to Nunnally's (1978) suggestions in this regard.

## 5. Results

The results section will begin by providing preliminary data analysis of the demographic statistics. It will then present the two-stage structural equation modelling (SEM) that was adopted to validate the conceptual model and test its associated hypotheses. The results of the confirmatory factor analysis (CFA) in the first stage are presented in Section 5.3, while Section 5.4 presents the structural model, the second stage of the SEM results.

### 5.1. Demographic statistics

As seen in Table 2, out of 500 distributed questionnaires, 337 (67.4%) were returned and found to be valid for more advanced analysis. More than half (60.2%) the participants were male; accordingly, females accounted for 39.8% of participants. As for the age categories, the vast majority (63.5%) of respondents were within the age group of 21–29, with 14.8% in the age group of 30–39, and the smallest percentage (1.8%) in the group of those aged 60 and over. In terms of educational level, holders of Bachelor's degrees constituted the largest group in the current sample size, accounting for 46.3% of the total sample size, followed by those who have high school degrees (18.7%). Regarding the income level distribution, the largest part (43.6%) of the current sample was for those who have a monthly income level ranging from 601 to 800 JOD; about 8.6% of current study participants reported having an income level higher than 1,001 JOD. Finally, most participants (58.5%) in the current study had experience with MFOAs of less than one year.

### 5.2. Descriptive statistics of the scale items

Table 3 shows the mean and standard deviation for all items used in the questionnaire. Overall, participants seem to have had a positive perception of MFOAs for all the aspects considered in the current study. For example, users of MFOAs positively perceived MFOAs in terms of performance expectancy, as the average mean for four items was 6.52 with an average standard deviation value of 0.601. The average mean of effort expectancy items was 6.28 (0.840), which expresses a positive perception of the ease of use of MFOAs. Positive perception was also noticed among the study participants regarding facilitating conditions, as the average mean for the four items used was 6.44 (0.616). Social influence items had an average mean value of 6.42 (0.701), which indicates the positive role of social influence for the current study participants. Likewise, using MFOAs seemed to be more enjoyable and entertaining for the respondents, as the average mean of hedonic motivation items was 6.44 (0.463). The vast majority of the participants

**Table 2**  
Demographic Characteristics of Respondents.

| Demographic Profile               | Number of Respondents<br>(N = 337) | Percentage (%) |
|-----------------------------------|------------------------------------|----------------|
| <b>Gender</b>                     |                                    |                |
| Male                              | 203                                | 60.2           |
| Female                            | 134                                | 39.8           |
| Total                             | 337                                | 100            |
| <b>Age</b>                        |                                    |                |
| 18-20                             | 44                                 | 13.1           |
| 21-29                             | 214                                | 63.5           |
| 30-39                             | 50                                 | 14.8           |
| 40-49                             | 23                                 | 6.8            |
| 60+                               | 6                                  | 1.8            |
| Total                             | 337                                | 100            |
| <b>Monthly Income Level (JOD)</b> |                                    |                |
| Less than 400                     | 31                                 | 9.2            |
| 400-600                           | 72                                 | 21.4           |
| 601-800                           | 147                                | 43.6           |
| 801-1,000                         | 58                                 | 17.2           |
| 1,001+                            | 29                                 | 8.6            |
| Total                             | 337                                | 100            |
| <b>Education Level</b>            |                                    |                |
| High school                       | 63                                 | 18.7           |
| Diploma                           | 59                                 | 17.5           |
| Bachelor                          | 156                                | 46.3           |
| Postgraduate                      | 49                                 | 14.5           |
| Other                             | 10                                 | 3.0            |
| Total                             | 337                                | 100            |
| <b>MFOAs Experience</b>           |                                    |                |
| Less than one year                | 197                                | 58.5           |
| 1-2 years                         | 101                                | 30             |
| 2-3 years                         | 11                                 | 3.2            |
| More than 3 years                 | 39                                 | 11.6           |
| Total                             | 337                                | 100            |

perceived using MFOAs as reasonably priced, as all items of price value had an average mean value of 6.11 (0.647). The average mean of habit items was 6.435 (0.681), which indicates that users of MFOAs have formulated a habitual behaviour towards such apps. In addition, respondents seem to have been motivated to continue using MFOAs, as the average mean of continued intention items was 6.48 (0.632). Three external factors that present the innovative features of MFOAs were positively valued by the participants, as the average means for these three factors were as follows: online review (6.53; 0.612); online rating (6.416; 0.702); and online tracking (6.443; 1.032).

### 5.3. Confirmatory factor analysis

The first stage involved testing the model's fitness using CFA. A number of fit indices were considered, such as goodness-of-fit index (GFI); adjusted goodness-of-fit index (AGFI); comparative fit index (CFI); normed chi-square (CMIN/DF); normed-fit index (NFI); and root mean square error of approximation (RMSEA) (Byrne, 2010; Hair, Black, Babin, & Anderson, 2010; Tabachnick & Fidell, 2007). Table 4 presents the results of these tests.

As Table 4 shows, the results for goodness of fit for the first version of the measurement model were not within their recommended level, so the model was revised by dropping the most problematic items (Byrne, 2010). Several common criteria were adopted to revise the measurement model. The standardised regression weight table of the scale items was inspected and any item with a factor loading of less than 0.50 was removed (Hair et al., 2010). FC4, SATIS4, OR5, and OT5 were noticed to have factor loadings below 0.50; accordingly, they were all dropped from the measurement model. In addition, according to the modification indices table, the error term values for all items were tested and any item with a high error term value was dropped from the scale (Hooper, Coughlan, & Mullen, 2008; Jöreskog & Sörbom, 1993).



**Table 3**  
Descriptive Statistics of the Scale Items (Mean and Standard Deviation).

| Constructs              | Item    | Mean   | Standard Deviation |
|-------------------------|---------|--------|--------------------|
| Performance Expectancy  | PE1     | 6.59   | .587               |
|                         | PE2     | 6.54   | .577               |
|                         | PE3     | 6.50   | .627               |
|                         | PE4     | 6.47   | .632               |
|                         | Average | 6.52   | .601               |
| Effort Expectancy       | EE1     | 6.28   | .830               |
|                         | EE3     | 6.26   | .834               |
|                         | EE2     | 6.26   | .852               |
|                         | EE4     | 6.34   | .848               |
|                         | Average | 6.28   | .840               |
| Social Influences       | SI1     | 6.42   | .699               |
|                         | SI2     | 6.44   | .683               |
|                         | SI3     | 6.40   | .718               |
|                         | Average | 6.42   | .701               |
| Facilitating Conditions | FC1     | 6.47   | .587               |
|                         | FC2     | 6.46   | .572               |
|                         | FC3     | 6.45   | .606               |
|                         | FC4     | 6.41   | .701               |
|                         | Average | 6.44   | .616               |
| Hedonic Motivation      | HM1     | 6.77   | .439               |
|                         | HM2     | 6.67   | .482               |
|                         | HM3     | 6.72   | .484               |
|                         | Average | 6.72   | .463               |
| Price Value             | PV1     | 6.13   | .658               |
|                         | PV2     | 6.16   | .630               |
|                         | PV3     | 6.05   | .653               |
|                         | Average | 6.11   | .647               |
| Habit                   | HB1     | 6.49   | .673               |
|                         | HB2     | 6.45   | .658               |
|                         | HB3     | 6.41   | .698               |
|                         | HB4     | 6.39   | .695               |
|                         | Average | 6.435  | .681               |
| Online Review           | OR1     | 6.52   | .618               |
|                         | OR2     | 6.50   | .583               |
|                         | OR3     | 6.50   | .583               |
|                         | OR4     | 6.47   | .617               |
|                         | OR5     | 6.62   | .605               |
|                         | OR6     | 6.67   | .536               |
|                         | OR7     | 6.46   | .743               |
|                         | Average | 6.53   | .612               |
| Continued Intention     | CI1     | 6.56   | .836               |
|                         | CI2     | 6.55   | .858               |
|                         | CI3     | 6.55   | .834               |
|                         | CI4     | 6.48   | .632               |
|                         | Average | 6.535  | .790               |
| Online Rating           | ORT1    | 6.42   | .724               |
|                         | ORT2    | 6.45   | .680               |
|                         | ORT3    | 6.38   | .702               |
|                         | Average | 6.416  | .702               |
| Online Tracking         | OT1     | 6.4540 | 1.025              |
|                         | OT2     | 6.4421 | 1.045              |
|                         | OT3     | 6.4332 | 1.027              |
|                         | OT4     | 6.012  | 1.541              |
|                         | OT5     | 6.047  | 1.457              |
|                         | Average | 6.277  | 1.219              |

**Table 4**  
Fit Indices.

| Fit Indices | Recommended Value | Measurement Model (first version) | Measurement Model (second version) |
|-------------|-------------------|-----------------------------------|------------------------------------|
| CMIN/DF     | ≤ 3.000           | 3.654                             | 2.544                              |
| GFI         | ≥ 0.90            | 0.837                             | 0.909                              |
| AGFI        | ≥ 0.80            | 0.773                             | 0.854                              |
| NFI         | ≥ 0.90            | 0.868                             | 0.929                              |
| CFI         | ≥ 0.90            | 0.908                             | 0.954                              |
| RMSEA       | ≤ 0.08            | 0.071                             | 0.058                              |

Consequently, two items from online reviewing (OR6, OR7) and one item from online tracking (OT4) with high error term values were deleted from the measurement model. The revised model was then tested

**Table 5**  
Standardized Regression Weights (Factor Loading).

| Items  |     | Latent construct | Estimate |
|--------|-----|------------------|----------|
| PE1    | < — | PE               | .910     |
| PE2    | < — | PE               | .823     |
| PE3    | < — | PE               | .868     |
| PE4    | < — | PE               | .791     |
| EE1    | < — | EE               | .886     |
| EE2    | < — | EE               | .860     |
| EE3    | < — | EE               | .885     |
| EE4    | < — | EE               | .894     |
| SI1    | < — | SI               | .974     |
| SI2    | < — | SI               | .925     |
| SI3    | < — | SI               | .976     |
| FC1    | < — | FC               | .982     |
| FC2    | < — | FC               | .882     |
| FC3    | < — | FC               | .644     |
| PV1    | < — | PV               | .858     |
| PV2    | < — | PV               | .703     |
| PV3    | < — | PV               | .909     |
| HM1    | < — | HM               | .854     |
| HM2    | < — | HM               | .670     |
| HM3    | < — | HM               | .830     |
| HB1    | < — | HB               | .927     |
| HB2    | < — | HB               | .874     |
| HB3    | < — | HB               | .898     |
| HB4    | < — | HB               | .848     |
| CI1    | < — | CI               | .965     |
| CI2    | < — | CI               | .967     |
| CI3    | < — | CI               | .955     |
| SATIS1 | < — | SATIS            | .923     |
| SATIS2 | < — | SATIS            | .952     |
| SATIS3 | < — | SATIS            | .885     |
| OR1    | < — | ORA              | .966     |
| OR2    | < — | ORA              | .754     |
| OR3    | < — | ORA              | .644     |
| OR4    | < — | ORA              | .951     |
| ORT1   | < — | ORTT             | .869     |
| ORT2   | < — | ORTT             | .759     |
| ORT3   | < — | ORTT             | .756     |
| OT1    | < — | OTT              | .979     |
| OT2    | < — | OTT              | .979     |
| OT3    | < — | OTT              | .970     |

and found to adequately fit the observed data as all fit indices this time were within their acceptable values (Byrne, 2010; Hair et al., 2010; Holmes-Smith, Coote, & Cunningham, 2006).

Several criteria were adopted to test the reliability and validity of the constructs, namely composite reliability (CR), Cronbach’s alpha, average variance extracted (AVE), and discriminant validity (Fornell & Larcker, 1981; Hair et al., 2010). The convergent validity was also tested by looking at the factor loading value extracted by each scale item (Hair et al., 2010). As seen in Table 5, all unremoved scale items had a standardized regression weight value higher than 0.50, therefore meeting Hair et al.’s (2010) recommended values. The AVE values for all constructs were above 0.50, meeting the recommended values suggested by Fornell and Larcker (1981) and Hair et al. (2010). As Table 6 shows, the largest value of AVE was recorded for OT (0.953), whereas the smallest value of AVE was for HM (0.622).

Furthermore, CR values were calculated and found to be within their cut-off values. All latent constructs had a CR value not less than 0.70, as recommended by Fornell and Larcker (1981) and Hair et al. (2010). As shown in Table 6, OT had the largest CR value (0.984), while the lowest value of CR was for HM (0.80). Similarly, Cronbach’s alpha values for all constructs were noticed to be above their cut-off value of 0.70. The highest Cronbach’s alpha was also recorded for OT (0.984), while the lowest value was noticed in the case of HM (0.827). Following Fornell and Larcker (1981), a comparison was conducted between the inter-correlation values and squared roots of AVE for latent construct. As seen in Table 7, squared roots of AVE values were greater than their counterparts pertaining to inter-correlation values.

**Table 6**  
Construct Validity and Reliability.

| Latent construct | Cronbach's alpha | CR    | AVE   |
|------------------|------------------|-------|-------|
| PE               | 0.912            | 0.912 | 0.721 |
| EE               | 0.933            | 0.933 | 0.777 |
| SI               | 0.971            | 0.971 | 0.919 |
| FC               | 0.866            | 0.882 | 0.719 |
| HM               | 0.827            | 0.830 | 0.622 |
| PV               | 0.861            | 0.866 | 0.686 |
| HB               | 0.937            | 0.937 | 0.787 |
| CI               | 0.974            | 0.974 | 0.926 |
| SATIS            | 0.942            | 0.943 | 0.847 |
| OR               | 0.898            | 0.903 | 0.705 |
| ORT              | 0.834            | 0.838 | 0.634 |
| OT               | 0.984            | 0.984 | 0.953 |

Finally, a common method bias test was conducted by considering Harman's single-factor (Harman, 1976; Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Twelve constructs with their associated unremoved items were subjected to Harman's single-factor test using exploratory factor analysis and inspected by means of an unrotated factor solution. It was clearly found that there is no concern about the common method bias of the current study data due to there being no emerging factor recorded, and because 34.004 per cent of variance was recorded for the first factor. This value is not higher than 50 per cent, as recommended by Podsakoff et al. (2003).

5.4. Structural model

The research hypotheses of the conceptual model were all tested in the second stage using SEM. Initially, the fit indices of the structural model existed within their recommended levels as follows: CMIN/DF = 2.989; GFI = 0.90; AGFI = 0.842; NFI = 0.912; CFI = 0.951; and RMSEA = 0.059. This, in turn, supports the goodness of fit extracted for the structural model (Hair et al., 2010). The predictive validity was also supported for the conceptual model as a large amount of variance was accounted for both e-satisfaction (0.57) and continued intention to reuse (0.86).

As for the testing of the research hypotheses (Table 8), the results of the path coefficient analyses indicated that e-satisfaction was significantly predicted by the role of PE ( $\gamma = 0.518, p < 0.000$ ); PV ( $\gamma = 0.136, p < 0.004$ ); FC ( $\gamma = 0.316, p < 0.000$ ); HM ( $\gamma = 0.171, p < 0.000$ ); OT ( $\gamma = 0.192, p < 0.000$ ); OR ( $\gamma = 0.193, p < 0.000$ ); and ORT ( $\gamma = 0.280, p < 0.000$ ). However, the impact of SI ( $\gamma = 0.009, p < 0.835$ ) and EE ( $\gamma = 0.001, p < 0.979$ ) on e-satisfaction was not supported. As for the main causal paths leading to customers' continued intention to use MFOAs, the results supported the significant influence of HB ( $\gamma = 0.449, p < 0.000$ ); e-satisfaction ( $\gamma = 0.536, p < 0.000$ ); PE ( $\gamma = 0.602, p < 0.000$ ); OT ( $\gamma = 0.262,$

**Table 7**  
Discriminant Validity.

|       | OR           | EE           | PV           | CI           | SATIS        | HB           | SI           | OT           | FC           | PE           | ORT          | HM           |
|-------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| OR    | <b>0.840</b> |              |              |              |              |              |              |              |              |              |              |              |
| EE    | 0.183        | <b>0.881</b> |              |              |              |              |              |              |              |              |              |              |
| PV    | 0.178        | 0.150        | <b>0.828</b> |              |              |              |              |              |              |              |              |              |
| CI    | 0.521        | 0.132        | 0.220        | <b>0.962</b> |              |              |              |              |              |              |              |              |
| SATIS | 0.488        | 0.356        | 0.389        | 0.557        | <b>0.920</b> |              |              |              |              |              |              |              |
| HB    | 0.342        | 0.599        | 0.191        | 0.664        | 0.551        | <b>0.887</b> |              |              |              |              |              |              |
| SI    | 0.085        | 0.062        | 0.051        | 0.083        | 0.033        | 0.018        | <b>0.959</b> |              |              |              |              |              |
| OT    | 0.153        | 0.574        | 0.172        | 0.703        | 0.398        | 0.418        | 0.092        | <b>0.976</b> |              |              |              |              |
| FC    | 0.149        | 0.141        | 0.222        | 0.293        | 0.507        | 0.236        | 0.035        | 0.315        | <b>0.848</b> |              |              |              |
| PE    | 0.495        | 0.379        | 0.302        | 0.456        | 0.735        | 0.826        | 0.002        | 0.249        | 0.294        | <b>0.849</b> |              |              |
| ORT   | 0.358        | 0.299        | 0.281        | 0.471        | 0.663        | 0.520        | 0.030        | 0.230        | 0.261        | 0.686        | <b>0.796</b> |              |
| HM    | 0.278        | 0.257        | 0.227        | 0.391        | 0.454        | 0.268        | 0.089        | 0.175        | 0.236        | 0.346        | 0.339        | <b>0.789</b> |

Note: Diagonal values are squared roots of AVE; off-diagonal values are the estimates of inter-correlation between the latent constructs.

**Table 8**  
Results of Hypotheses Testing.

| #   | Hypothesized path | Estimate | S.E. | C.R.   | P    | VIF   |
|-----|-------------------|----------|------|--------|------|-------|
| H1  | CI <— PE          | .602     | .091 | 9.334  | ***  | 2.871 |
| H2  | SATIS <— PE       | .518     | .042 | 8.250  | ***  | 2.096 |
| H3  | CI <— EE          | .008     | .064 | .241   | .810 | 1.184 |
| H4  | SATIS <— EE       | .001     | .026 | .026   | .979 | 1.203 |
| H5  | CI <— SI          | .015     | .031 | .542   | .588 | 1.351 |
| H6  | SATIS <— SI       | .009     | .022 | .209   | .835 | 1.901 |
| H7  | CI <— FC          | .064     | .045 | 1.869  | .062 | 1.651 |
| H8  | SATIS <— FC       | .316     | .030 | 6.588  | ***  | 2.041 |
| H9  | CI <— PV          | .013     | .040 | .397   | .691 | 1.421 |
| H10 | SATIS <— PV       | .136     | .028 | 2.902  | .004 | 1.987 |
| H11 | CI <— HM          | .245     | .064 | 3.140  | ***  | 2.325 |
| H12 | SATIS <— HM       | .171     | .045 | 3.460  | ***  | 2.429 |
| H13 | CI <— HB          | .449     | .065 | 10.739 | ***  | 2.841 |
| H14 | CI <— OR          | .175     | .043 | 3.558  | .004 | 2.037 |
| H15 | SATIS <— OR       | .193     | .030 | 3.949  | ***  | 2.148 |
| H16 | CI <— ORT         | .197     | .058 | 3.331  | ***  | 2.007 |
| H17 | SATIS <— ORT      | .280     | .039 | 4.750  | ***  | 2.174 |
| H18 | CI <— OT          | .262     | .028 | 7.129  | ***  | 2.541 |
| H19 | SATIS <— OT       | .192     | .019 | 3.657  | ***  | 1.987 |
| H20 | CI <— SATIS       | .536     | .109 | 8.644  | ***  | 2.689 |
| H21 | HB <— SATIS       | .485     | .067 | 11.532 | ***  | 2.852 |

$p < 0.000$ ); OR ( $\gamma = 0.175, p < 0.004$ ); ORT ( $\gamma = 0.197, p < 0.000$ ); and HM ( $\gamma = 0.245, p < 0.000$ ). On the other hand, continued intention was not predicted by the role of FC ( $\gamma = 0.064, p < 0.062$ ); PV ( $\gamma = 0.013, p < 0.691$ ); SI ( $\gamma = 0.015, p < 0.588$ ); and EE ( $\gamma = 0.008, p < 0.810$ ). A strong relationship was also revealed between e-satisfaction and habit ( $\gamma = 0.485, p < 0.000$ ) (Fig. 2).

To ensure that there was no multicollinearity problem among the independent factors (PE, EE, SI, FC, PV, HM, HB, OR, ORT, and OT) and dependent factors (CI and e-SATIS), variance inflation factors (VIF) were tested. Table 8 shows that VIF values for all causal associations were not higher than 10, which means that there is no concern regarding multicollinearity (Brace, Kemp, & Snelgar, 2003; Diamantopoulos & Siguaw, 2000).

6. Discussion

The empirical results supported the predictive validity of most of the proposed factors. The findings of the CFA largely demonstrated the goodness of fit of the measurement model to the observed data. Moreover, all factors were able to match the main criteria of reliability and validity of constructs. Further, the current study model was able to explain about 0.86 and 0.57 of variance in customer continued intention and e-satisfaction respectively. This, in turn, approves the theoretical foundation for the current model. In addition, statistical evidence confirmed the importance of including online review, online rating, and online tracking along with the UTAUT2 constructs. For instance, the

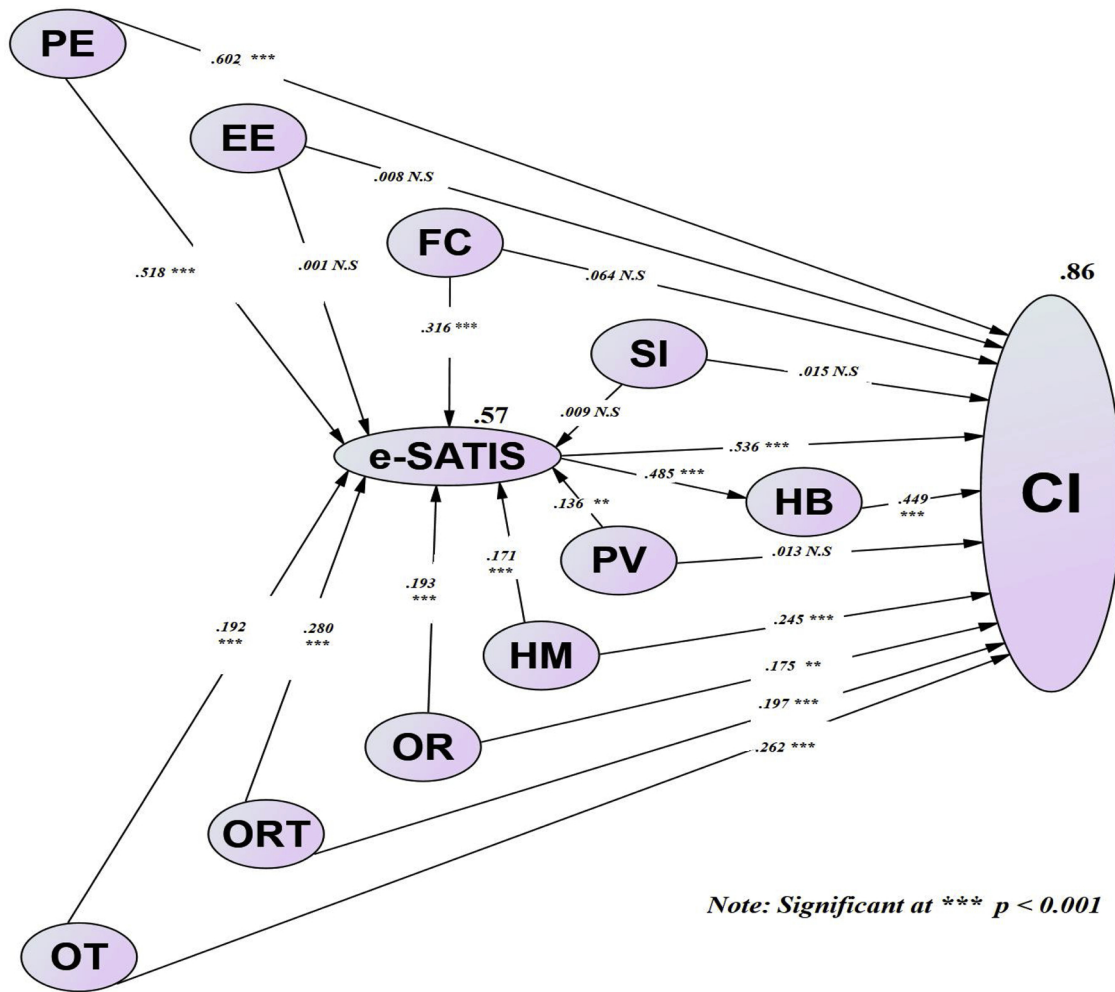


Fig. 2. Validation of the Conceptual Model.

UTAUT2 factors alone predict about 0.65 of variance in customer continued intention and 0.41 of variance in e-satisfaction. However, by considering OR, ORT, and OT, the predictive validity of the whole model was enhanced to reach 0.86 of variance in continued intention and 0.57 in e-satisfaction.

The results of the path coefficients' analysis confirmed most of the proposed hypotheses. As seen in Table 8, performance expectancy was the most influential factor predicting both e-satisfaction and continued intention. This demonstrates the importance of the cognitive and functional benefits of MFOAs from the Jordanian customers' perspective. MFOAs have different attractive features that give customers more mobility and flexibility in ordering food than do traditional ways such as physically visiting restaurants or telephoning them. Accordingly, customers are more able to save time and effort. Such results pertaining to the significant influence of performance expectancy parallel those reached by Okumus et al. (2018) in relation to MFOAs. In addition, the role of performance expectancy was confirmed by Alalwan, Dwivedi et al. (2017) in their study that tested the adoption of mobile banking in Jordan.

According to the results, hedonic motivation was confirmed to have a crucial impact on both e-satisfaction and continued intention. This means that Jordanian customers are more likely to be pleased about the usage experience of MFOAs, and, accordingly, willing to keep using these applications in future if they derive a sense of pleasure, comfort, and enjoyment from using them. These results could be attributed to the fact that, in the consumer context, functional benefits (i.e., usefulness and performance expectancy) are sufficient on their own to guarantee

customer satisfaction (Venkatesh et al., 2012). Therefore, it has consistently been argued that psychological and hedonic benefits play an important role in shaping the customer's feeling of pleasure and the decision to use or reject new products and innovations (Brown & Venkatesh, 2005; Davis et al., 1992; Van der Heijden, 2004). Furthermore, the considerable role of hedonic motivation could be explained by MFOAs still being a new and innovative technology in Jordan; hence, using such apps could accelerate the customers' feelings of pleasure and enjoyment.

Price value was only able to predict e-satisfaction, and there was no significant relationship between price value and customers' continued intention. Customer satisfaction is more related to the short-term outcomes of the customer's experience with products and services. A customer is more likely to be pleased if the actual value received is higher than the expected one. This logically justifies the important role of price value in shaping the customer's satisfaction, especially given that MFOAs can provide customers with a higher price value in comparison with the financial cost paid. However, once it comes to the customer's future decision to use MFOAs, price value received less attention from the Jordanian customers' perspective. Even though the consequences of the customer's experience in the short term (satisfaction and dissatisfaction) are largely predicted by financial and price issues, the customer's experience in the long term (brand equity, loyalty, continued intention) is largely shaped by the role of hedonic and cognitive issues (Nisar & Whitehead, 2016; Yen & Gwinner, 2003; Zeithaml, Berry, & Parasuraman, 1996).

As with price value, facilitating conditions predict only e-

satisfaction, while continued intention to reuse was not predicted by this factor. The obtainability of technical and human support is a critical issue for Jordanian customers to be pleased about their experience of using MFOAs. To put it differently, without the existence of such important facilities, customers would not be able to efficiently use MFOAs and attain the benefits required for them to be satisfied. Such results are similar to those of Chan et al. (2010) and Maillet et al. (2015), who demonstrated the role of facilitating conditions on satisfaction. However, the results contradicted the hypothesis that facilitating conditions would influence the intention to reuse. As a result, although facilitating conditions are important aspects of the customer's experience with satisfaction, future intention to reuse is less predicted by this factor. Such results could be attributed to the fact that facilitating conditions are more related to the customer's immediate experience, either in terms of actual usage behaviour (Alalwan, Dwivedi et al., 2017) or satisfaction (Chan et al., 2010; Maillet et al., 2015). Furthermore, the present study's sample consisted of actual adopters of MFOAs who had experience of using such apps. In general, with adequate experience with technology, users are less likely to be influenced by the role of facilitating conditions to form their intention to use new systems (Mathieson, 1991; Venkatesh et al., 2003, 2012). Okumus et al. (2018) reached the same conclusion by disproving the impact of facilitating conditions on the customer's intention to use mobile food diet apps, and Shaw and Sergueeva (2019) empirically rejected the impact of facilitating conditions on customers' intention to use mobile commerce.

As discussed above, the results have confirmed the significant influence of the three new factors added to the conceptual model: online review, online rating, and online tracking. In the current study, Jordanian customers were noticeably interested in the availability of reviews provided by other customers on the MFOAs. This indicates that users of MFOAs perceive such online reviews as credible, useful, rich, and relevant sources of information that can be used when they are in the process of ordering food. Thus, by using MFOAs, customers can easily and conveniently access a lot of online reviews posted by other customers. This, in turn, facilitates the customer's buying process in terms of collecting information, evaluating alternatives, and making the buying decision; as a result, the customer's time and efforts are saved. Accordingly, online reviews not only contribute to the customer's satisfaction and continued intention to use MFOAs but also positively predict the customer's perception of the usefulness of MFOAs.

Online rating was also supported by the current study's results, which revealed that Jordanian customers highly appreciate this innovative feature of MFOAs. Online rating empowers customers to provide their own feedback in a more efficient and reliable way. Accordingly, customers who rate their experience of using MFOAs can feel more strongly that they have contributed in terms of co-creation value (Luo, Zhang, & Liu, 2015). Online rating also facilitates the purchasing experience of other customers who wish to compare alternatives before ordering, since the ratings visually present the feedback of previous customers (King et al., 2014; Ludwig et al., 2013; Qiu et al., 2012). According to Filieri (2015), online rating presents the overall assessment for all customers who have tried the products, so the usefulness and credibility of such average evaluations could be more highly valued by customers than are those presented in single reviews.

Online tracking received considerable attention from the Jordanian customers who had used MFOAs. The statistical results supported the significant influence of online tracking on both e-satisfaction and customers' continued intention to reuse. Online tracking as a feature of MFOAs makes the customer's contact and experience simpler and more efficient, as customers can follow the stages of their order without needing to have human contact with restaurants; this, in turn, reduces time, effort, and the cost of human contact that is generally required when ordering food in the traditional way (Kapoor & Vij, 2018). Therefore, it could be argued that, due to its novelty, online tracking enhances the customer's pleasure and enjoyment. In addition, it makes food ordering more efficient by reducing the perception of waiting

time, and it eliminates the expensive traditional calls to service providers to ask about the order status.

This study's results support the hypothesis regarding the positive impact of e-satisfaction on habit. This means that those customers who are pleased with their experience of using MFOAs are more likely to have a habitual behaviour of using MFOAs. In general, people who are happy about the outcomes of their prior behaviour and experience are more likely to keep repeating such behaviour. This is in line with Amoroso and Limös (2017) finding of a significant relationship between satisfaction and habit. Continuous intention was also found to be shaped by both habit and e-satisfaction. Adopters of any new systems are more likely to cognitively evaluate the actual outcomes with the expected ones. Accordingly, their future intention to reuse will be strongly predicted by the extent to which they are satisfied with their experience of such a new system. Several studies (Ajzen & Fishbein, 2005; Amoroso & Lim, 2017; Christodoulides & Michaelidou, 2010; Wang, Tseng et al., 2019) have acknowledged the impact of satisfaction on the customer's intention. Furthermore, customers who formulate a habitual behaviour towards a new system will retain their motivation to use such a system in the future. Such results are similar to those of Amoroso and Lim (2017) and Sun and Chi (2018).

On the other hand, the empirical results of the current study failed to confirm the role of either effort expectancy or social influence in predicting e-satisfaction and continued intention to reuse MFOAs. Jordanian customers seem to be less affected by recommendations and opinions of others regarding their experience and intention to use MFOAs. As discussed above, participants in the current study are actual users of MFOAs with a good experience of such a novel system. According to Venkatesh et al. (2003), customers largely rely on the opinions and suggestions of others in their initial usage of new systems. However, the impact of social influence could largely vanish once more experience of using new systems has been gained. In the prior literature, the non-significant effect of social influence has been noticed by Lu (2014) in a study testing the adoption of mobile commerce and by Alalwan, Dwivedi et al. (2017) in a study testing the adoption of mobile banking in Jordan. More recently, Shaw and Sergueeva (2019) failed to confirm the role of social influence on the intention to use mobile commerce.

The results also show that less attention was paid by the current study's sample participants regarding the extent to which MFOAs are easy to use and simple to understand. In studies on IS and technology acceptance, it has been argued that ease of use or effort expectancy could lose their impact on the customers' intention to use a new system if the level of benefits and perceived usefulness perceived in the system increase (Davis et al., 1989, 1992). The present study's results indicate that participants highly valued the level of performance expectancy and hedonic motivation. Accordingly, so as to attain the benefits (i.e., extrinsic and intrinsic) of MFOAs, customers could ignore the level of complexity they might perceive in using such mobile apps. Furthermore, as they are actual users who have had long experience in using smartphones and mobile apps, users of MFOAs trust more in their ability to use MFOAs and to overcome any difficulties in using such apps. These results are similar to those of Alalwan, Dwivedi et al. (2017) in relation to the adoption of mobile banking in Jordan. A recent study examining the acceptance of mobile commerce also empirically failed to prove the effect of effort expectancy on the intention to use mobile commerce (Shaw & Sergueeva, 2019).

### 6.1. Theoretical contribution

As discussed in the literature review, only a limited number of studies have tested issues relating to MFOAs (Cho et al., 2019; Okumus & Bilgihan, 2014; Okumus et al., 2018; Wang, Tseng et al., 2019; Wang, Ou, & Chen, 2019). Moreover, the perspective on MFOAs of Jordanian customers requires deeper understanding, especially given the lack of any studies either on Jordan or on any other Arab countries. Therefore,

this study makes a valuable contribution by expanding the current understanding regarding the main aspects pertaining to the successful implementation of MFOAs, either in Jordan or worldwide.

Another contribution of the current study is its greater focus on e-satisfaction and customer's continued intention to reuse, rather than on testing aspects of customer intention and initial adoption, as is commonly done in prior studies on MFOAs. This study also makes a contribution by validating the roles of online review, online rating, and online tracking. Indeed, these factors have never been examined in the area of MFOAs. This, in turn, gives new dimensions for the current knowledge about the most critical aspects considered by customers in forming their satisfaction experience and future decision to continue using MFOAs. In this respect, this study is the first to consider online review, online rating, and online tracking alongside the UTAUT2 factors. By doing so, the present research is able to expand the range and theoretical depth of UTAUT2, as strongly recommended by Venkatesh et al. (2012).

## 6.2. Practical implications

Besides its contribution to the theory, this study provides more practical and empirical understanding about the main factors that should be considered in designing and marketing MFOAs. For instance, considerable attention should be paid to the role of performance expectancy, which was supported in the current study as the most influential factor predicting both e-satisfaction and continued intention to reuse. Thus, marketers should focus more on the role of promotional campaigns to convince customers that using MFOAs requires minimal time and effort in comparison to traditional means of ordering food that involve physically visiting restaurants or making phone calls.

In this regard, much importance should be given to the accuracy of delivery time. Indeed, issues related to delivery time influence the customer's perception of the usefulness and efficiency of using MFOAs. Furthermore, to guarantee that customers can consistently and efficiently access and order food via MFOAs, regular maintenance is necessary to ensure the reliability and platform quality of MFOAs. It is also important to pay attention to the technical support and resources required to facilitate the customer's access and successful use of MFOAs. A customer service system should be available at all times to ensure that customers can cope with problems. Additionally, MFOAs should be designed to be more compatible with and comparable to other applications that customers already use. Moreover, users should be provided with more innovative features (e.g., customized help, interactive communication channels, FAQs) that help them capture any assistance or information required at any time that they require it (Okumus et al., 2018).

Marketers should also work on the aspects of hedonic utilities associated with using MFOAs. In this vein, promotional campaigns should focus on how using MFOAs is interesting and enjoyable. In addition, such campaigns should deliver an attractive message that using MFOAs is part of the modern lifestyle. Traditional media tools (television, radio, newspapers) should be used as well as social media platforms (e.g., Facebook, Instagram, YouTube) (Alalwan, Rana, Dwivedi, & Algharabat, 2017; Shareef, Dwivedi, Kumar, & Kumar, 2017). Customers should also feel that ordering food via MFOAs is reasonably priced. Further financial incentives (e.g., price discounts, quantity discounts, points and rewards such as vouchers) and a loyalty programme should be run for those customers who actively use MFOAs (Shareef, Dwivedi, Stamati, & Williams, 2014). Special treatment is very important to loyal customers, and operators of MFOAs can depend on loyal customers attracting other customers and to be rewarded for any new users coming via their recommendations.

MFOA features received considerable interest from Jordanian MFOA users. Accordingly, more efforts should be directed by marketers to these aspects. For example, due to the importance of the number of customers who rate and review their experience with MFOAs, operators

of MFOAs should motivate users to rate and provide reviews, and they should facilitate the rating and reviewing process (Filieri, 2015). It could be feasible to convince customers that such ratings and reviews are really important for customers, and that they are crucial for restaurants to improve their performance. It is also important to follow up all comments and reviews provided by customers and to ensure that reviews are updated, relevant, and credible so that other customers view them as a useful information resource. As with a number of other mobile applications (e.g., TripAdvisor), operators of MFOAs could ask customers to assess how valuable and beneficial each review is (Filieri, 2015). The visual aspects of the online rating system should also be designed so that customers can easily find the most highly rated restaurants. Indicating the number of reviewers who rate the targeted restaurants can also help create more credibility and trustworthiness (Filieri, 2015).

Finally, the availability of online tracking will enhance the attractiveness of using MFOAs. A number of considerations should be taken into account in designing a tracking system. For example, such a system should be designed to be simple and user friendly. Using map tracking could be suitable for this purpose as it would provide a visual and easy way for customers to track their orders. Furthermore, customers need to have sufficient information (length of delivery, location of the restaurants, distance between restaurant and customer's location, product quantity, cost, and name of the driver) regarding their food order (Shareef, Dwivedi, Kumar, & Kumar, 2016). It is important to ensure that all the information provided by an online tracking system is accurate, reliable, and credible, otherwise customers could lose trust in the online tracking ability and in MFOAs in general.

Customers have recently become more interested in their food choices and concerned about healthy eating habits and lifestyle (Okumus et al., 2018). Therefore, they also expect to have comprehensive, reliable, and credible nutritional information from either restaurant or MFOA operators (Hossain, Dwivedi, Chan, Standing, & Olanrewaju, 2018; Okumus et al., 2018). Indeed, providing customers with nutritional information not only has commercial value but also enhances the social responsibility of educating and teaching customers to adopt healthier eating habits (Kapoor et al., 2018; Okumus et al., 2018).

MFOA operators could enhance the customer's experience of ordering food by focusing more on the features of mobile technology (e.g., personalization, responsiveness, ubiquitous connectivity, and active control). As long as customers have a high level of personalized treatment and service, they will highly value using such apps, and, accordingly, they will be satisfied about their experience. This level of personalization could be easily achieved by mobile technology due to its ability at capturing and recording large amounts of updated or historical customer data. Further, MFOAs should be designed in a way that lets customers have more control during the food ordering process. Likewise, customers are more likely to expect suitable, pertinent, and comparable responses or solutions regarding any questions or problems they may have. Accordingly, both restaurants and MFOA operators should work and coordinate their efforts to provide customers with a high level of responsiveness.

## 7. Conclusion

This study has attempted to provide more understanding regarding the aspects that could shape Jordanian customers' satisfaction and continued intention to reuse MFOAs. It began by reviewing the main body of literature, which revealed that only a few studies have addressed issues related to MFOAs. The UTAUT2 model was found to be a suitable theoretical foundation for the proposed conceptual model. In this model, both e-satisfaction and continued intention were supposed to be predicted by PE, EE, FC, SI, HM, PV, and HB. Due to the particular nature of MFOAs and the restaurant context, three other factors were proposed along with UTAUT2: OR, ORT, and OT. The data for the

current study was collected in Jordan from actual adopters of MFOAs. The data was then analysed using SEM and the results largely supported the validity of the current study's model by confirming the influence of the most significant of the proposed factors on e-satisfaction and continued intention. A rich results discussion was presented in light of the particular nature of MFOAs, the restaurant context, and Jordan. Further explanation and discussion were provided about the theoretical contributions and practical implications of this study.

### 7.1. Limitations and future research directions

Regardless of this study's efforts to enrich the current understanding of MFOAs in Jordan, a number of limitations should be noted. The nature of the current study is cross-sectional, so it has not been able to capture an accurate view that explains how customers' perception could

change over time. Therefore, a longitudinal study is required in future research to discover how customers could adapt their experience, perception, and satisfaction over time. There is also a concern whether the current results are generalizable, since a convenience sampling technique was used. By extracting information from the customer databases of MFOA operators, other kinds of simple random sampling techniques could be applied. Although a good number of factors have been covered in the current study's model, other factors (e.g., mobility, product variety, mobile interactivity, and customization) could be considered in future research. Moreover, this study has not considered the impact of cultural factors (e.g., food habits, health consciousness, family size, and lifestyle). Consideration of these cultural aspects by future studies would enrich the current understanding of the main factors that hinder or support the success of MFOAs.

## Appendix A

| Constructs              | Items  | Sources   |
|-------------------------|--------|---|
| Performance Expectancy  | PE1    | Venkatesh et al. (2012)   |
|                         | PE2    |   |
|                         | PE3    |   |
|                         | PE4    |   |
| Effort Expectancy       | EE1    | Venkatesh et al. (2012)   |
|                         | EE2    |   |
|                         | EE3    |   |
|                         | EE4    |   |
| Social Influence        | SI1    | Venkatesh et al. (2012)   |
|                         | SI2    |   |
|                         | SI3    |   |
| Facilitating Conditions | FC1    | Venkatesh et al. (2012)   |
|                         | FC2    |   |
|                         | FC3    |   |
|                         | FC4    |   |
| Hedonic Motivation      | HM1    | Venkatesh et al. (2012)   |
|                         | HM2    |   |
|                         | HM3    |   |
| Price Value             | PV1    | Venkatesh et al. (2012)   |
|                         | PV2    |   |
|                         | PV3    |   |
|                         | PV4    |   |
| Habit                   | HT1    | Venkatesh et al. (2012)   |
|                         | HT2    |   |
|                         | HT3    |   |
|                         | HT4    |   |
| Online Review           | OR1    | Park et al. (2007), Jiang and Benbasat (2004), Filieri (2015)                   |
|                         | OR2    |   |
|                         | OR3    |   |
|                         | OR4    |   |
|                         | OR5    |   |
|                         | OR6    |   |
|                         | OR7    |   |
| Online Tracking         | OT1    | Self-developed  |
|                         | OT2    |   |
|                         | OT3    |   |
|                         | OT4    |   |
|                         | OT5    |   |
| Satisfaction            | SATIS1 | Anderson and Srinivasan (2003); Wang, Tseng et al. (2019); Lee and Chung (2009) |
|                         | SATIS2 |   |
|                         | SATIS3 |   |
|                         | SATIS4 |   |
|                         | SATIS5 |   |

|                     |      |  |                         |
|---------------------|------|--|-------------------------|
| Online Rating       | ORT1 | Customer ratings provided in mobile food order apps have helped me to learn about the product.                                       | Filieri (2015)          |
|                     | ORT2 | Customer ratings provided in mobile food order apps have improved my understanding of the quality of the product's features.         |                         |
|                     | ORT3 | Customer ratings provided in mobile food order apps were useful in order to evaluate the quality of product specifications/features. |                         |
| Continued Intention | CI1  | I intend to continue using mobile food order apps in the future.   | Venkatesh et al. (2012) |
|                     | CI2  | I will always try to use mobile food order apps in my daily life.  |                         |
|                     | CI3  | I plan to continue to use mobile food order apps frequently.   |                         |

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