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Examining UTAUT model for mobile food ordering applications (MOFAs): A case study of Food-panda application

Uroosa Raees[a], Syed Afzal Moshadi Shah[b], Iftikhar Ahmed Khan[c], Musaddag Elrayah[b], Abbas N Albarq[b*], Mohamed A. Moustafa[b,d], Khaled Al Falah[b] and Jehad A. Afaneh[b]

[a]*Department of Management, COMSATS University Islamabad Abbottabad Campus, Pakistan*
[b]*Management Department, College of Business Administration, King Faisal University, Al-Hassa 31982, Saudi Arabia*
[c]*Department of Computer Sciences, COMSATS University Islamabad, Abbottabad Campus, Pakistan*
[d]*Faculty of Tourism and Hotel Management, Helwan University, Cairo, Egypt*

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A B S T R A C T

The purpose of the study was to examine the effectiveness of the Mobile Food Ordering Application (MFOA) in a collectivist country like Pakistan. Data was gathered using an online survey-based approach from 354 MFOA users and was analyzed using the structural equation modeling technique through Smart PLS 3.0. The results show that consumers' online reviews strongly influence customer satisfaction and continued intention. Similarly, price value and online tracking of food services are strongly associated with customer satisfaction. Consumer habits and facilitation conditions are significantly associated with consumer continued intention. Habit is also found to partially mediate consumer satisfaction and continued intention. The study did not find any support for performance expectancy, effort expectancy, social influence, price value, hedonic motivation, or online review with continued intention. Similarly, performance expectancy, effort expectancy, social influence, facilitating conditions, and hedonic motivation were not associated with consumer satisfaction. The present work is the first of its kind that has empirically examined the effectiveness of MFOAs in Pakistan. It lays down useful practical implications for practitioners, policymakers, and academia.

1. Introduction

MFOAs are gaining popularity around the world. The most popular reason to order online is to save time (Al Amin et al., 2021). Additionally, the COVID-19 pandemic has also posed a serious threat to the existence of businesses worldwide. Due to this many businesses faced the threat of going out of business. Food businesses are no exceptions. However, the lifestyle and buying patterns of consumers have shifted from bricks to clicks (Ali et al., 2021). Dine-in traffic at restaurants has declined by 83% when compared with the last few years, which is due to the lockdown imposed by the governments. Furthermore, customers do not prefer Dine-in services due to health concerns (Li et al., 2020). Mobile applications helped businesses to generate business volume and have provided hope for sustainability during these tough times (Prasetyo et al., 2021). Alagoz and Hekimoglu (2012) stated that the usefulness of a virtual food delivery system, trust, and innovativeness are the main factors that shape a user's attitude towards the system. Another study conducted by Spyridou (2017) in Taiwan concluded that the perceived quality of the service is the key determinant for predicting user continued intention. However, prior studies on food delivery apps show that product design, trust, and variety also influence user attitude (Cho *et al.*, 2019). Furthermore, Okumus and Bilgihan (2014) identified different

* Corresponding author.
E-mail address aalbarq@kfu.edu.sa (A.N. Albarq)

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antecedents of users' willingness to use MFOAs'. By adopting the UTAUT model a study on M-diet apps conducted by Okumus et al., (2018) showed that social influence, effort, and performance expectancy are the key variables to predict customer willingness. Functionality, usability, and content are the factors that encourage people to adopt and use MFOAs (Pigatto *et al*., 2017). In the M-catering app context, the positive attitude of customers can be created through perceived quality (Wang *et al.,* 2019). Past research validates the relationship between different customer perception factors towards online food delivery applications (Yeo *et al.*, 2017).

Further, the research on examining the effectiveness of MFOAs has rarely been examined (Al Amin *et al.*, 2020), especially in the Pakistani context. The significance of the MFOA study in Pakistan increase due to the scarcity of literature on the subject, the existence of distinctive culture, and due to the enormous potential for online shopping in the country. Further, the need to examine the MFOA in Pakistan increases due to its distinctive cultural background. The literature significantly highlights the idiosyncratic nature of the culture (Shah & Amjad, 2011, Syed, 2008, Yasmeen, Ahmad, Raziq, & Khan, 2020 & Qadeer, 2006). Also, the Pakistani online consumer market is expected to grow during 2022 to US$7,666m (Statista.com). The pandemic has also helped the shift to online shopping (The News, 2021). Hence the study set the following research objectives:

i. To study the impact of customer perception factors (i.e., effort expectancy, performance expectancy, facilitating conditions, price value, social influence, hedonic motivation, and habit) on customers' satisfaction and continued intention.
ii. To analyze the impact of mobile app features (i.e., online rating, online tracking, and online review) on satisfaction and continued intention.
iii. To investigate the impact of customers' satisfaction on continued intention.

2. Literature Review and Hypothesis Development

2.1 Performance Expectancy (PE)

Venkatesh (2003, p. 447) defines performance expectancy as "the degree to which an individual believes that using the new system or application will help him/ her to attain gains in job performance". This construct of the UTAUT model is considered the most important construct to examine behavior intentions (Huang & Kao, 2015). PE is the mixture of five constructs from prior models i.e. external motivation, perceived usefulness, outcome expectancy, job fit, and relative advantage (Yu, 2012). Prior research on PE conducted by different researchers concluded that this construct of the UTAUT model has a significant effect on adoption and behavior intentions when using a new innovative service or product (Venkatesh *et al.,* 2003; Wang *et al*., 2003; Slade *et al*., 2015; Rana *et al.*, 2016; Sair & Danish, 2018; Shareef *et al.*, 2018). Another study by Lai, (2015) also reported the significant relationship between PE and CI. User intention to adopt the trend of online food ordering mechanisms is influenced by PE (Yeo *et al.*, 2017). The statistical evidence is also provided by Okumus *et al*., (2018b), which shows the significance of the relationship between PE and intention to use food apps. Roh and Park, (2019) also reported that PE has a significant effect on the intention to use mobile apps during the Covid19 pandemic period. Thus, the hypothesis of the study is proposed as:

Hypothesis 1: *Performance expectancy positively impacts customers' continued intention to reuse MFOAs.*

An empirical study on online shopping demonstrates that the relationship between PE and satisfaction is strengthened by users' past shopping experiences (Pappas et al., 2014). The studies conducted in past by different researchers in different contexts also reported a significant relationship between satisfaction and PE (Chong, 2013; Susanto *et al*., 2016; Yuan *et al*., 2016b). In MFOA's context, the perception of users towards the utilities of these apps is higher. If the perceived expectations are fulfilled by actual outcomes the users become satisfied with the product (Mun *et al.*, 2017). PE had a major impact on satisfaction and continued intention to use a new system or technology (Loureiro *et al.,* 2018). Therefore, PE is considered the main predictor that affects customers' satisfaction (Marinković *et al*., 2020). Thus, the hypothesis of the study is proposed as:

Hypothesis 2: *Performance expectancy positively impacts customers' satisfaction with the MOFAs.*

2.2 Effort Expectancy (EE)

Effort expectancy is defined as **"**The degree of ease associated with the use of the system" (Venkatesh, Morris, Davis & Davis 2003). According to Davis (1989), this UTAUT model construct is related to three variables i.e., ease of use (IDT), Complexity (MPCU), and perceived ease of use (TAM). The study on mobile food ordering apps conducted in the US and Korea shows a stronger impact of EE on behavioral intention (BI) among the consumers of the US than in Korea (Im *et al.*, 2011). The study by Wu and Wang, (2005) in FDA's context argued that there is no significant association between BI and EE. Wang *et al*., (2021)

reported that customer intentions to reuse online courses during the Covid19 pandemic are directly impacted by social influence (SI) and effort expectancy (EE). The user's intention to use the e-learning system is affected by EE and PE (Abbad, 2021). Thus, the hypothesis of the study is proposed as:

Hypothesis 3: *Effort expectancy positively impacts customers' continued intention to reuse MFOAs.*

The prior studies indicate that the customer's mostly adopted those new applications which are easy to use and require less time and effort (Alalwan et al., 2017). Zhou, (2011) provides evidence that satisfaction of customers is influenced by EE in the mobile payment context. Kaewkitipong *et al.*, (2016) supported the impact of EE on satisfaction. There is a positive association between satisfaction and EE (Amin *et al.*, 2014). The results reported by Hussien and Mansour, (2020) reveal that customer satisfaction toward MFOAs is affected by effort expectancy, payment, and usefulness. Thus, the hypothesis of the study is proposed:

Hypothesis 4: *Effort expectancy positively impacts customers' satisfaction with the MFOAs.*

2.3 Social Influence (SI)

Venkatesh et al., (2003) defined SI as the extent to which a person may feel important or is given a social value because of the usage of modern technology. The literature indicates that social influence predicts consumer behavioral intentions. Image, social factors, and subjective norms are adopted from the previous technology model in the SI construct. This construct is considered the most key factor concerning users either adopting or rejecting mobile applications (Venkatesh, 2003b). Wang and Chou, (2016) investigate the social influences factors (group norms, injunctive norms, social identity, and descriptive norms) that impact user intention toward mobile commerce apps. Results show that continued intention to use is positively influenced by social identity and descriptive and injunctive norms. A study by Islam, (2011) reported that CI to use e-learning systems is not significantly impacted by SI, PEOU, and compatibility. SI and EE are observed to have a profound effect on the continuous intention to use e-government facilities (Razak *et al*., 2017). In the online food ordering context Ren *et al.*, (2020) results did not support the relationship between SI and CI in the use of food apps. However, there is wide usability literature available that suggests satisfaction related to software technology acceptance (Preece et al. (2015). Hence a single result could be ignored and would be worthwhile to evaluate most of the literature suggestions. Thus, the hypothesis of the study is proposed as:

Hypothesis 5: *Social influence positively impacts customers' continued intention to reuse MFOAs.*

Ogara *et al*., (2014) reported that social influence, perceived richness, and perception of users' impact their satisfaction and social presence. The impact of perceived satisfaction on suggestions to use e-wallets is also found to be moderated via SI (Singh *et al.*, 2020). Hsiao, Cheng, and Tang (2016) suggested that SI plays a key role in determining user satisfaction with smartphone apps. Therefore, the hypothesis of the study is proposed as:

Hypothesis 6: *Social influence positively impacts customers' satisfaction with the MFOAs.*

2.4 Facilitating Conditions (FC)

Facilitating condition is considered the direct determinant of user behavior. It is defined as "the perception of consumers towards resources and support that offered to perform a behavior" (Palau-Saumell et al., 2019). Okumus (2016) validated that FC has a non-significant influence on the intention to use mobile diet apps. Furthermore, the user's continuous intention to use delivery apps cannot be determined by FC, EE, PV, and HM (Lee *et al*., 2019). However, Verkijika, (2018) empirically validated the impact of FC on users' intention toward mobile applications. A study by Ambarwati *et al*., (2020) stated that behavior intention has a significant relationship with both the constructs (i.e. facilitating condition and habit) to adopt an online learning platform. As the results that suggested positive impact of FC on continued intention to reuse apps is contradicting. Therefore, the hypothesis of the study is proposed as:

Hypothesis 7: *Facilitating conditions positively impact customers' continued intention to reuse MFOAs.*

Facilitating conditions are considered the direct determinant of user behavior. It is defined as "the perception of consumers towards resources and support that are offered to perform a behavior" (Palau-Saumell et al., 2019). Okumus (2016) validated that FC has a non-significant influence on the intention to use mobile diet apps. Furthermore, the user's continuous intention to use delivery apps cannot be determined by FC, EE, PV, and HM (Lee *et al*., 2019). However, Verkijika, (2018) empirically validated the impact of FC on users' intention toward mobile applications. A study by Ambarwati *et al*., (2020) stated that behavior intention has a significant relationship with both the constructs (i.e. facilitating condition and habit) to adopt an online learning platform. The

results that suggested a positive impact of FC on continued intention to reuse apps is contradicting. Therefore, the hypothesis of the study is proposed as:

Hypothesis 8: *Facilitating conditions positively impact customers' satisfaction with the MFOAs.*

2.5 Price Value (PV)

The price value constructs differentiate the Extended-UTAUT from the previous UTAUT model. The extended model originated from the perceived price value which is considered a vital element to attract customers to various products (Zhao *et al.*, 2012). Venkatesh et al. (2012, p. 421) defined price value as: "The consumers' psychological trade-offs between the application's potential gain and the financial cost of using them." Hsu and Lin, (2015) reported the direct relationship between intention to repurchase and perceived price value. The user CI to use fitness and health apps is significantly predicted by PV along with other variables of the Extended-UTAUT model (Yuan, Ma, Kanthawala, and Peng, 2015). Prior research validated the significant and positive relationship between PV and intention to use M-internet service (Venkatesh *et al.*, 2012), M-banking in Jordan (Alalwan *et al*., 2017), and M-commerce apps (Shaw & Sergueeva, 2019). Thus, the hypothesis of the study is proposed as:

Hypothesis 9: *Price value positively impacts customers' continued intention to reuse MFOAs.*

Price is the key factor that predicts customer satisfaction with products and services. Oyedele *et al.*, (2018) stated that under the idea of economic value, PV is discovered as a key factor in predicting user SATIS and CI to adopt and use technology (i.e. Smart wristbands). Iyer *et al*., (2018) support the empirical relationship between PV and satisfaction from the perspective of M-retail apps. El-Adly, (2019) reported that satisfaction partially mediated the relationship between customer loyalty and the hotel's perceived PV. Thus, the hypothesis of the study is proposed as:

Hypothesis 10: *Price value positively impacts customers' satisfaction with the MFOAs.*

2.6 Hedonic Motivation (HM)

Hedonic motivation is defined as "the fun and pleasure associated when using a new system or technology" (Venkatesh et al., 2012). The HM construct is positively linked with the behavior intention of the user to use M-shopping apps (Chopdar and Sivakumar, 2019b). Lu *et al*., (2009) stated that intrinsic motivations (i.e., Hedonic motivation) significantly affect users' attitudes to use instant messages which also increases behavioral intentions. To analyze users' intentions Magni *et al*., (2010) validated the impact of hedonic motivations on customer repurchase intentions. Behavior intention and hedonic motivation, prior experience, convenience, attitude, and price saving are positively inter-linked with each other (Yeo *et al*., 2017). Akel and Armagan, (2021) reported that the continuous intention of the user to use location-based apps is positively linked with hedonic and utilitarian benefits. Hedonic motivation, habit, effort expectancy, and price value have a positive relationship with the customer's continuous intention to use online food apps (Zulkefli *et al.*, 2020). Thus, the hypothesis of the study is proposed as:

Hypothesis 11: *Hedonic motivation positively impacts customers' continued intention to reuse MFOAs.*

Evidence from the restaurant industry reveals that customer satisfaction is strongly influenced by HM and has a direct impact on behavioral intentions (Ryu *et al*., 2010). Anand *et al*., (2019) report that buyer satisfaction is induced by HM either directly or through the mediation of experience and attitude. Prasetyo *et al*., (2021) stated that HM has the most significant effect on user satisfaction with the services provided by food delivery apps during the pandemic period along with the promotion, price, and quality of information. Thus, the hypothesis of the study is proposed as:

Hypothesis 12: *Hedonic motivation positively impacts customers' satisfaction with the MFOAs.*

2.7 Habit (HB)

Habit is defined "as learned series of actions that become automated responses towards a particular situation, which may be operational in achieving certain goals" (Verplanken & Wood, 2006, p. 99). A study by Kim *et al*., (2005) explains the relationship between habit and continuous intention which is supported by habit theory because the habitual behavior conducted in the past triggers the positive feeling with behavior which in turn enhances continued intention. The study by Lee, (2014) reported that there is a little conceptual overlap between intention and habit, which provides additional information for continuous usage of technology products or services. Continuous intention and use behavior are directly influenced by habit (Baptista and Oliveira, 2015; Morosan & DeFranco, 2016; Bolen, 2020). Furthermore, the habit construct of Extended-UTAUT was considered the key

predictor to observe the actual usage behavior of customers or users in Jordan (Alalwan et al., 2017). Habit influenced the intention to use food delivery apps (Christino *et al.,* 2020). Thus, the hypothesis of the study is proposed as:

Hypothesis 13: *Habit positively impacts customers' continued intention to reuse MFOAs.*

2.8 Online Review (ORV)

An online review is a form of word of mouth (WOM) which is communicated through an online platform (i.e., the internet). The ORV is important and helpful for other customers while purchasing a product or comparing it with other alternatives (Filieri, 2015). A study by Simonson and Rosen, (2014) indicates that the exchange of information among customers through reviews helps understand the customers liking and disliking the services or products. However, it is also helpful for companies in formulating strategies according to customers' demands. Through online platforms, it is easy for customers to share experiences in terms of ratings and reviews. For example: In the online food ordering context, the customers can post their feedback about the food and services on the relevant website or App from where they ordered food (Bert *et al*., 2014). A study by Elwalda *et al*., (2016) on online shopping reports the strong and favorable relationship between characteristics stated in ORV and the intention of customers towards online shopping. Thus, the hypothesis of the study is proposed as:

Hypothesis 14: *Online review positively impacts customers' continued intention to reuse MFOAs.*

ORV is considered highly dependable and trustworthy because it contains the opinions of customers. Thus buyers frequently return to such information sources whenever they need to buy a product (Filieri & McLeay, 2014). The relationship between impact and weight of online review valence effects are moderated by receiver expertise (Ketelaar *et al*., 2015). A study by Ashraf *et al.*, (2020) reported that the customers perceived verification and continued trust positively influenced their satisfaction with online product reviews which also impacted their continued intention to shop again from the same website. Thus, the hypothesis of the study is proposed as:

Hypothesis 15: *Online reviews positively impact customers' satisfaction with the MFOAs.*

2.9 Online Rating (ORT)

Online dating is one of the important sources of information about the product for retailers, customers, and manufacturers (Chen & Xie, 2008). ORT helps customers' to numerically capture the evaluation of the product or services in terms of quality, accuracy, price, and delivery time, etc. (King *et al*., 2014). Users could rate their buying experience numerically using (1-5 or 1-7) star rating scale in addition to posting online reviews (King *et al*., 2014). The ORT is helpful for other people in generating a complete evaluation of a service or product based on various characteristics that are numerically evaluated by other customers who share their experience with a service or product (Korfiatis *et al*., 2012). Casaló *et al*., (2015) also report the meaningful relationship between travellers' attitudes and ORT. By adopting the casualty model Tran *et al*., (2019) confirm the positive linkages among online ratings, satisfaction, and online motivation through information. Thus, the hypothesis of the study is proposed as:

Hypothesis 16: *Online rating positively impacts customers' continued intention to reuse MFOAs.*

ORT could play an effective role in encouraging the perceptions of customers towards the performance and productivity of mobile apps in general and MFOAs (Roy *et al*., 2018). ORT highly affects SATIS and CI to use such apps (Qiu *et al*., 2012). A study on eBay.com demonstrated that ORT plays a key role in predicting the trust and satisfaction of users as well as their continued intention to shop online (Pavlou & Dimoka, 2006). There is a direct relationship between conversion rates and online ratings (Ludwig *et al.*, 2013). Thus, the hypothesis of the study is proposed as:

Hypothesis 17: *Online rating positively impacts customers' satisfaction with the MFOAs.*

2.10 Online Tracking (OT)

Online tracking or services based on location are provided by mobile phone technology that enables sellers and customers to direct their exact location when performing computational or communicational components (Pura, 2005). Customers are more likely to use mobile apps because of the availability of innovative mobile features (OT, ORT, and ORV). Through online tracking, one can easily track their order (Shugan, 2004). Apart from this friend finder, navigation, GPRS system, and payment status are the common services provided under the online tracking system (Gutierrez *et al*., 2019). Real-time and online tracking (Bewley *et al.*,

2016), visual tracking (Zadeh *et al*., 2021), and online multi-tracking (Yoon *et al*., 2021) are the studies conducted by different researchers from different perspectives. Thus, the hypothesis of the study is proposed as:

Hypothesis 18: *Online tracking positively impacts customers' continued intention to reuse MFOAs.*

The use of an OT system can improve the performance, comfort, and satisfaction of the consumers' purchasing experience. Customers are given better innovative and visibility tools to track their order throughout the journey (from ordering to delivery) of the product. However, their experience with such apps will be satisfying and engaging (Yeo *et al.,* 2017). A study by Kapoor and Vij, (2018) reported that users' time and efforts can be saved by using innovative features of food ordering applications. Through navigational tools, the user can see his/her order at all stages. Thus, the hypothesis of the study is proposed as:

Hypothesis 19: *Online tracking positively impacts customers' satisfaction with the MFOAs.*

2.11 Satisfaction (SATIS)

Satisfaction is defined "as the customer's satisfaction with his/ her previous shopping experience with a specific e-commerce firm" (Anderson & Srinivasan, 2003, p. 125). The satisfaction from a prior purchase experience motivates the decision of customers to continue to buy the same product or services from the same service provider in the future (Kaynak, 2003). However, continuous intention refers to the "customer's intention or ability to purchase a certain product or service from the same App or website in the future, taking into consideration the current situation and possible conditions" (Lacey *et al*., 2007, p. 246). In the current study, both SATIS and CI are endogenous variables. Oliver (1999) suggested in his previous study that customers' satisfaction is correlated with customers' continued intention. A study by Chen *et al*., (2012) explains that CI is dependent on SATIS. Likewise, a study by Joo and Choi, (2016) shows that the connection between confirmation, usefulness, and the continued intention was mediated by satisfaction when using online library services. Trong *et al*., (2018) also confirm the strong relationship between continued intention and satisfaction in the restaurant sector. In the context of mobile catering apps, Wang, Tseng *et al*., (2019) approved that when the perceived expectations of customers matched with the actual outcomes of using the catering apps they are satisfied with their experience and are more likely to continue to use it repeatedly. A study conducted in Bangladesh on MFOAs reveals that e-satisfaction significantly influenced the continuous intention of the customers to use MFOA's (Md Al Amin et al., 2020). Thus, the hypothesis of the study is proposed as:

Hypothesis 20: *Satisfaction positively impacts customers' continued intention to reuse the MFOAs*

Customers' attitudes and perceptions are formed by their past interactions and experiences, which forecast their intention to behave similarly (Ajzen & Fishbein, 2005). According to Limayem *et al*., (2007) in the formation of habits with the adoption and use of information systems (IS), user satisfaction has been recognized as the primary antecedent. In the online retailing context, a study by Christodoulides and Michaelidou, (2011) proposed that when customers are satisfied with their online shopping experience, they are more likely to continue to use it again and would stay committed to that online store. Furthermore, Amoroso and Lim, (2017) explain the association between habit and satisfaction. They find that when the users of MFOAs are satisfied with their experience they habitually reuse it again. Thus, the hypothesis of the study is proposed as follows:

Hypothesis 21: *Customers' satisfaction will have a positive impact on habits with the MFOAs.*

Prior studies revealed that satisfaction and habit shape continued intention. Users of new (IT (Information Technology)) systems or technology are more likely to compare perceived outcomes with the actual outcome. Accordingly, the future intention to reuse the new system was predicted by how much the customer is satisfied with his experience of using the system (Wang et al., 2019). A study by Wang et al. (2013) reported that the impact of intention on future usage is mediated by habit. Moreover, satisfaction has an impact on continued intention (Christodoulides & Michaelidou, 2011). Thus, the hypothesis of the study is proposed as:

Hypothesis 22: *Habit mediates between satisfaction and continued intention.*

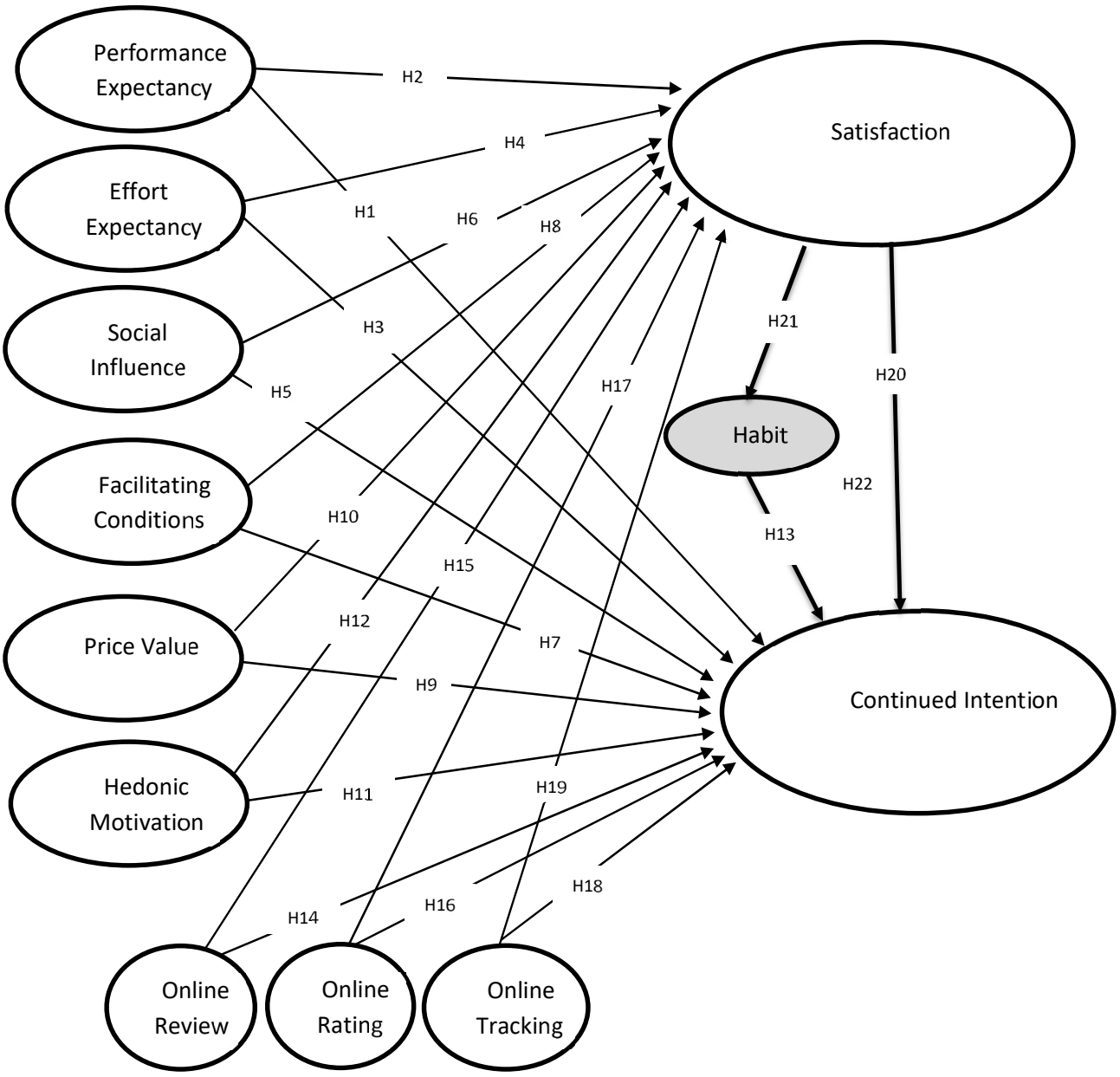

Fig. 1. Conceptual Framework

Source: Created by author

3. Research Methodology

The empirical part of the study is conducted in the Hazara division of KPK. The target population of the study was the consumers of a global MFOA that is also available locally. According to the MFOA sources, there are around 50,000 registered users in the region. Therefore, to calculate the sample size of this study, the Yamane equation (Yamane, 1967) is utilized as below:

$$n = \frac{N}{1 + N \times (e)^2} \tag{1}$$

where n= Sample size, N= Population, e= chances of error (5% or 0.5) which yields

$$n = \frac{50{,}000}{1 + 50{,}000 \times (0.05)^2} = 399.825$$

The study used an online survey-based random data collection approach using Google forms. The requests were made through social media i.e., Facebook. This methodology is in line with previous studies like Ferrell et al. (2019). The data was collected in two months. The responses were recorded on a seven-point Likert scale as per the following mapping: 1= "strongly disagree", and 7= "strongly agree". The study utilized an adapted instrument measure from Alalwan (2020). The process yielded 434 responses whereas 354 responses were valid for further analysis. The gender-based responses were almost equal i.e., male=52.5% and female 47.5%. Most of the consumers were young between the age of 16-35 years (85.8%). However, around 43% of respondents reported using the app on an occasional basis, 32.8% on a weekly basis, and 16.9% every month. Please see Table 1 for complete details.

Table 1
Demographic Characteristics of Respondents

Variable	Categories	Frequencies *(f)*	Percentage *(%)*
Gender	Female	168	47.5%
	Male	186	52.5%
Total		**354**	**100.0**
Age	< 15 years	9	2.5
	16-25 years	197	55.6
	26-35 years	107	30.2
	36-45 years	31	8.8
	46-55 years	7	2.0
	> 56 years	3	.8
Total		**354**	**100.0**
Usage experience with Foodpanda App	Daily	25	7.1
	Weekly	116	32.8
	Monthly	60	16.9
	Occasionally	153	43.2
Total		**354**	**100.0**

For the empirical data collected, quantitative analysis approaches like structural equation modelling, Cronbach alpha for reliability, discriminant validity and Heterotrait–Monotrait ratios (HTMT) are used in the study. As the objective of the study was to assess twenty-two hypotheses (a large set of hypotheses), therefore the PLS tool is used to avoid insufficiency of statistical power. As the study involved the opinions of the human participants, therefore informed consent was obtained from all the individual participants of the study. The Department of Management Sciences Graduate Program Ethical Committee (DoMS-GPEC) approved the procedure of the experiment and data collection.

4. Results

Table 2 provides complete detail of the measurement model measures. The measures for Discriminant validity Fornell & Larcker (1981) and Heterotrait–Monotrait ratios (HTMT) ratio also satisfy the qualifying criteria (Franke & Sarstedt, 2019). The results are summarized in Table 3 and Table 4. The structural model exhibits the desired values as recommended in the literature (Becker et al., 2015; Mason & Perreault, 1991). Please see (Fig 2) below.

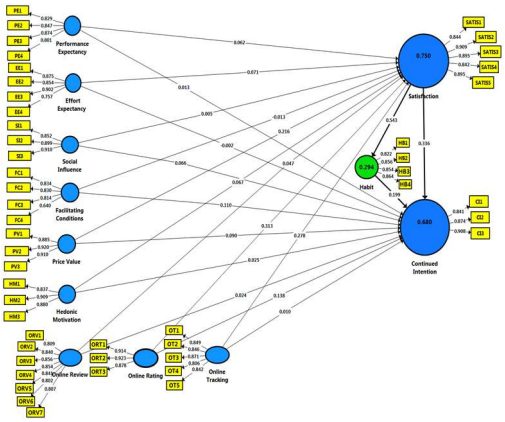

Fig. 2. Structural Model

Table 2
Measurement Model Assessment

Construct	Items	Loadings	Composite Reliability	Cronbach's Alpha	AVE	R^2	Adjusted R^2
Continued Intention	CI1	0.841	0.907	0.846	0.765	0.680	0.670
	CI2	0.874					
	CI3	0.908					
Effort Expectancy	EE1	0.875	0.911	0.869	0.720		
	EE2	0.854					
	EE3	0.902					
	EE4	0.757					
Facilitating Conditions	FC1	0.834	0.863	0.785	0.614		
	FC2	0.830					
	FC3	0.814					
	FC4	0.640					
Habit	HB1	0.822	0.912	0.872	0.721	0.294	0.292
	HB2	0.856					
	HB3	0.854					
	HB4	0.865					
Hedonic Motivation	HM1	0.837	0.908	0.848	0.767		
	HM2	0.909					
	HM3	0.880					
Online Rating	ORT1	0.914	0.931	0.890	0.819		
	ORT2	0.923					
	ORT3	0.878					
Online Review	ORV1	0.809	0.940	0.925	0.689		
	ORV2	0.840					
	ORV3	0.856					
	ORV4	0.854					
	ORV5	0.841					
	ORV6	0.802					
	ORV7	0.807					
Online Tracking	OT1	0.849	0.925	0.898	0.711		
	OT2	0.846					
	OT3	0.871					
	OT4	0.806					
	OT5	0.842					
Performance Expectancy	PE1	0.829	0.904	0.859	0.703		
	PE2	0.847					
	PE3	0.874					
	PE4	0.801					
Price Value	PV1	0.885	0.931	0.890	0.819		
	PV2	0.920					
	PV3	0.910					
Satisfaction	SATIS1	0.844	0.944	0.925	0.770	0.750	0.743
	SATIS2	0.909					
	SATIS3	0.895					
	SATIS4	0.842					
	SATIS5	0.895					
Social Influence	SI1	0.852	0.917	0.865	0.788		
	SI2	0.899					
	SI3	0.910					

Table 3
Fornell and Larcker Approach

	CI	EE	FC	HB	HM	ORT	ORV	OT	PE	PV	SATIS	SI
CI	**0.875**											
EE	0.522	**0.849**										
FC	0.596	0.652	**0.784**									
HB	0.608	0.298	0.421	**0.849**								
HM	0.610	0.508	0.520	0.539	**0.876**							
ORT	0.689	0.563	0.587	0.445	0.608	**0.905**						
ORV	0.686	0.489	0.581	0.618	0.637	0.750	**0.830**					
OT	0.626	0.538	0.552	0.491	0.559	0.678	0.690	**0.843**				
PE	0.583	0.543	0.563	0.509	0.573	0.545	0.592	0.525	**0.838**			
PV	0.645	0.513	0.581	0.469	0.605	0.614	0.654	0.528	0.597	**0.905**		
SATIS	0.764	0.592	0.595	0.543	0.640	0.778	0.723	0.739	0.607	0.694	**0.878**	
SI	0.584	0.506	0.463	0.570	0.597	0.535	0.601	0.475	0.629	0.555	0.561	**0.887**

Note CI* continued intention, *EE* effort expectancy, *FC* facilitating conditions, *HB* habit, *HM* hedonic motivation, *ORT* online rating, *ORV online review, OT* online tracking, *PE* performance expectancy, *PV* price value, *SATIS* satisfaction, *SI* social influence

Table 4
Heterotrait-Monotrait Approach (HTMT)

	CI	EE	FC	Habit	HM	ORT	ORV	OT	PE	PV	SATIS	SI
CI												
EE	**0.607**											
FC	0.731	**0.790**										
HB	0.700	0.342	**0.507**									
HM	0.718	0.588	0.638	**0.624**								
ORT	0.792	0.641	0.703	0.496	**0.698**							
ORV	0.771	0.545	0.683	0.675	0.714	**0.825**						
OT	0.714	0.608	0.658	0.546	0.638	0.757	**0.754**					
PE	0.681	0.625	0.686	0.582	0.670	0.620	0.659	**0.594**				
PV	0.741	0.583	0.698	0.523	0.689	0.689	0.718	0.585	**0.680**			
SATIS	0.862	0.657	0.698	0.593	0.720	0.856	0.780	0.808	0.675	**0.763**		
SI	0.681	0.588	0.563	0.658	0.692	0.610	0.667	0.536	0.730	0.632	**0.626**	

Note CI* continued intention, *EE* effort expectancy, *FC* facilitating conditions, *HB* habit, *HM* hedonic motivation, *ORT* online rating, *ORV online review, OT* online tracking, *PE* performance expectancy, *PV* price value, *SATIS* satisfaction, *SI* social influence

The results (Table 5) of the path coefficient analysis revealed that ORT (β= 0.313, t= 4.924, p < 0.000) PV (β= 0.216, t= 3.958, p < 0.000) and OT (β=0.278, t= 4.933, p < 0.000) have a significant impact on customers SATIS with the App and SATIS have a significant impact on HB (β=0.543, t= 14.406, p < 0.000). HB (β= 0.199, t= 4.154, p < 0.000), SATIS (β= 0.336, t= 4.198, p < 0.000) and FC (β= 0.110, t= 2.015, p < 0.044) have a significant impact on CI to reuse the App. The results also revealed that HB partially mediates SATIS and CI. As (β= 0.149, t=5.979, p < 0.000).

Table 5
Hypothesis Testing Results

Hypothesis	Constructs	Path coefficient	Mean	Standard deviation	T value	P value	Decision
H1	PE → CI	0.013	0.012	0.053	0.237	0.813	Rejected
H2	PE → SATIS	0.062	0.062	0.046	1.348	0.178	Rejected
H3	EE → CI	-0.002	-0.001	0.047	0.039	0.969	Rejected
H4	EE → SATIS	0.071	0.072	0.049	1.441	0.150	Rejected
H5	SI → CI	0.066	0.067	0.055	1.204	0.229	Rejected
H6	SI → SATIS	0.005	0.004	0.043	0.114	0.909	Rejected
H7	FC → CI	0.110	0.111	0.055	2.015	0.044	Accepted
H8	FC → SATIS	-0.013	-0.012	0.053	0.243	0.808	Rejected
H9	PV → CI	0.090	0.087	0.050	1.805	0.071	Rejected
H10	PV → SATIS	0.216	0.213	0.055	3.958	0.000	Accepted
H11	HM → CI	0.025	0.028	0.056	0.442	0.659	Rejected
H12	HM → SATIS	0.067	0.066	0.046	1.449	0.148	Rejected
H13	HB → CI	0.199	0.194	0.048	4.154	0.000	Accepted
H14	ORV → CI	0.024	0.028	0.065	0.371	0.710	Rejected
H15	ORV → SATIS	0.047	0.049	0.061	0.763	0.446	Rejected
H16	ORT → CI	0.138	0.144	0.067	2.071	0.039	Accepted
H17	ORT → SATIS	0.313	0.313	0.064	4.924	0.000	Accepted
H18	OT → CI	0.010	0.012	0.051	0.196	0.844	Rejected
H19	OT → SATIS	0.278	0.278	0.056	4.933	0.000	Accepted
H20	SATIS → CI	0.336	0.327	0.080	4.198	0.000	Accepted
H21	SATIS → HB	0.543	0.544	0.038	14.406	0.000	Accepted

T value Acceptance = ≥ 1.96 - P value Acceptance = ≤0.05*

However, the study does not support the impact of PE (β=0.062, t= 1.348, p > 0.178), EE (β= 0.071, t= 1.441, p > 0.150), SI (β= 0.005, t= 0.114, p > 0.909), FC (β= -0.013, t= 0.243, p > 0.808), HM (β= 0.067, t= 1.449, p > 0.148), ORV (β= 0.047, t= 0.763, p > 0.446) on customers' SATIS and the study also does not support the imapct of PE (β= 0.013, t= 0.237, p > 0.813), EE (β= -0.02, t= 0.039, p > 0.969), SI (β= 0.066, t= 1.204, p > 0.229), PV (β=0.090, t= 1.805, p > 0.071), HM (β= 0.025, t= 0.442, p > 0.659), ORV (β= 0.024, t= 0.371, p > 0.710) and OT (β= 0.010, t= 0.196, p > 0.844) on customers' CI to reuse the app. The relationship hypothesized in H22 i.e., the mediating effect of Habit (HB) between satisfaction (SATIS) and continued intention (CI) was examined through smart PLS using bootstrapping technique. The results reveal that the total effect of SATIS on CI was significant and positive (β= 0.765, t= 25.023, p < 0.000). With the inclusion of HB as a mediating or intervening variable the direct impact is also significant (β= 0.616, t= 13.321, p < 0.000). However, the β value is decreased from 0.765 to 0.616 which indicated that there is an existence of partial mediation. The indirect effect of SATIS on CI through HB is also significant (β= 0.149, t=5.979, p < 0.000). Therefore, the result in the Table 6 indicates that the relationship between SATIS and CI is partially mediated by HB.

Table 6
Testing mediation of Habit between satisfaction and continued intention

Testing mediation of Habit between Coefficient (β value)	P value	Coefficient (β value)	P value		Coefficient (β value)	SD	T value	P value
.765	.000	.616	.000	SATIS → HB → CI	.149	.025	5.979	.000
Results: Partial Mediation								

5. Discussion

The basic purpose of the study was to examine the technology acceptance among consumers of Pakistan for mobile food ordering applications (MFOA) i.e., the app. The results of the path coefficients analysis indicate that facilitating conditions have a significant impact on continued intention to reuse the App. The users are more concerned about the quality and services delivered by the app in terms of human support (i.e. delivery time, customer service, and call centers) and its ability to function without interruption or technical issues constantly. The finding is similar with earlier studies like Verkijika (2018), Huijboom & Broek (2011), Ambarwati et al. (2020) and Sanandra and Nair (2021).

The results indicate that price value has a significant positive impact on customer satisfaction. It is the fact that if the actual price is lower than the perceived price the customers are more satisfied with the product. The finding is like the previous findings of (Oyedele et al., 2018; Iyer et al., 2018; El-Adly, 2019) in the context of technology adoption. The customers' interactions with modern technology are depicted by habit. The results indicate a significant relationship between habit and continued intention which means that habit positively impacts customers' continued intention to reuse The App. The study of Morosan & DeFranco, (2016) also shows the significant impact of habit on continued intention. Christino et al. (2020) study on online food delivery apps also showed the significant relationship between habit and continued intention.

Online ratings are the most influential factor in predicting both satisfaction and continued intention. This feature is highly appreciated by the users of the app. Through this feature, users can post their feedback reliably and efficiently. The results are like the study of Pavlou & Dimoka (2006) and Tran et al. (2019). Additionally, online tracking is also the most important innovative feature of a mobile app that predicts customer satisfaction. The results reported that online tracking has a positive and significant impact on customers' satisfaction with the app. The study of Kapoor & Vij (2018) and Yeo et al. (2017) supports the influence of online tracking (Albarq, 2024).

The result obtained from the present study supports the positive impact of satisfaction on habit. The users who are satisfied with their experience of using the app are likely to use it repeatedly. A study conducted in prior literature by Amoroso & Lim (2017) also supports the satisfaction and consumer habit relationship as significant. The users' continued intention to reuse the app is based on their experience. The impact of satisfaction on continued intention is also supported in earlier studies (Ajzen & Fishbein, 1969; Chen et al., 2012; Hsiao et al. 2016). Customers continued intention is shaped by habit and satisfaction. Thus, satisfaction and continued intention are found partially mediated by consumer habit.

However, as expected the study reports some distinctive findings that are different than the main stream literature. Like the impact of perceived expectations, effort expectancy, social influence, perceived value, hedonic motivation, online review and online rating is well established in developing continued intention among consumers (Pappas *et al*., 2014, Chong, 2013, Yuan et al., 2016b, Mun *et al.*, 2017, Loureiro *et al.,* 2018, Im *et al*., 2011, Wang *et al*., 2021, Abbad, 2021). However, none of these relationships was found significantly effecting the continued intention to purchase online food in this study. The possible explanation may lie within the distinctive cultural background of the consumers in Pakistan. Since MFOA are relatively new in the region and the consumers have not fully adapted to the technology hence they might not feel inclined towards continued intention to use. The majority of the consumers use homemade cooked food, they might feel unattracted towards using MFOA on a continuous basis. Further, the country is an underdeveloped country hence the buying power of the consumers may restrict them to purchase online food on continuous basis.

Similarly, the study does not find any support regarding the impact of perceived expectation, effort expectations, social influence, facilitation condition, hedonic motivation, and online rating on customer satisfaction. The existing literature provides support to these distinctive findings, like ew et al. (2015) reported that consumers that prefer to make decisions based on online ratings and reviews give little attention to social influence. Consumers may impart little attention to perceived expectations with price value with continued intention (Hung et al., 2012). Similarly, hedonic motivation reported no significant impact on satisfaction and continued intention (Rafie et al., 2018). Rana et al. (2012) reported no influence of facilitating conditions on customer satisfaction.

Further, Shareef et al., (2016) reported no linkage between customers' continued intention to reuse the App. Despite the existence of a handful of literature to support these findings, there is a need to further examine the possible causes of failure to link such important linkages. The findings indicate that consumer satisfaction is mostly influenced by price value, online rating, and online tracking systems. This again supports the argument that consumers belonging to an underdeveloped country pay high importance to price value rather than other dimensions of the service quality. The consumers impart special focus on the online rating of the MFOA and its online tracking system. Hence, businesses that dedicate a special focus towards enhancing these three dimensions would have better chances to earn high customer satisfaction. The results also indicate that customer satisfaction is positively associated with continued intention to buy the products and the development of customer habits to repurchase the products over a period of time.

6. Implications of the Study

The study provides a useful understanding that may be used for managerial implications. In addition, it also helps in the understanding of customers' perception of technology adoption of the App. Since rating online is the most influential factor of the study that predicts both customer satisfaction and continued intention. Therefore, MFOA management may focus on the online rating of customers. The service providers may introduce incentive schemes like bonus points for the customer who is more frequently purchasing via MFOA. The service providers may also secure customers' feedback and may utilize the findings to further improve the quality of the service. Customers give high importance to the level of information provided by the App. Hence the management may ensure the provision of accurate, dependable, and credible information about the delivery and quality of the food products. The app needs to introduce more innovative features like interactive communication channels and customized help which will enhance customer satisfaction and continuous intention. The findings of the study may also provide a good starting point for other businesses using similar Apps. It provides useful understanding and course material for academicians teaching consumer behavior-related courses.

7. Limitations and Future Direction of the Study

The limitations associated with a cross-sectional research design are inevitable in the study. Future studies may adopt other methods like the longitudinal approach. The study suffers from the limitations associated with an online survey-based research design. Future studies may adopt other methods like field surveys, interviews, etc. Future studies may explore the performance expectancy with customer satisfaction and continued intention using a qualitative approach i.e., interviewing to better understand the phenomena. Consumer income plays a very vital role in explaining the consumption pattern among consumers. This study has not examined consumer income and hence provides limited understanding of MFOA usage. Future studies may consider examining consumer income to examine MFOA usage.

8. Conclusion

The study is the first of its kind that has examined the MFOA's among the consumers of Pakistan using the Extended-UTAUT model. Most of the respondents were Foodpanda App users who were between the age of 16-35 years. The study provides some useful insights into consumer behavior as the majority of the established MFOA features have failed to prove valid in the country. The country's distinctive cultural background, economic condition, consumer buying behaviors and MFOA's usage may have strong relevance to these findings. Customer satisfaction can be achieved through providing price value, online tracking system and gaining positive online reviews. This may help the companies to develop customer satisfaction that is linked with continued intention and purchase habits. The study lays out practical implications for practitioners, consumers, and policymakers.

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