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DETERMINANTS OF CONTINUANCE USAGE INTENTION OF MOBILE FOOD ORDERING APPLICATIONS (MFOAS) AMONG VIETNAMESE USERS: THE MEDIATING ROLE OF E-SATISFACTION

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Abstract:

The study examines the effect of performance expectancy, effort expectancy, social influence, and facilitating conditions on customer e-satisfaction, and continuance usage intention of mobile food ordering applications (MFOAs). Data from 341 customers were analyzed by using PLS-SEM. Findings indicate the significant effect of performance expectancy, effort expectancy, social influence and facilitating conditions on customer e-satisfaction. Customer e-satisfaction is also positively related to continuance intention to use MFOAs. Interestingly, only social influence has both direct and indirect impacts on the continuance intention of MFOAs users. The effect of effort expectancy, performance expectancy and facilitating conditions on customer continuance intention was not significant. The study extends knowledge on customer behavior regarding MFOAs and provides critical implications for online restaurant marketers to improve customer e-satisfaction and enhance the understanding of the determinants of customer continuance intention to use MFOAs.

Keywords: mobile food ordering applications, customer E-satisfaction, continuance usage intention.

JEL Classifications: M31

1. Introduction

Nowadays, the internet has become a part of people's daily lives and has significantly changed different aspects of human life, including buying behaviors. Online shopping is no longer a new phenomenon. According to Statista (2021a), the world has over two billion people purchasing goods and services online from e-retailers, the sales surpassed 4.2 trillion U.S. dollars. Besides, e-commerce websites and various kinds of applications have been designed to serve online buyers on both smartphones and tablets. Among these apps, online food ordering applications (MFOAs) have been recently widely adopted by users and restaurants around the world. Especially, during the outbreak of coronavirus disease 2019 (COVID-19), the demand for using MFOAs is increasing dramatically. In 2021, there were 1.6 billion people using online food ordering applications and this number is expected to increase by 10% year-over-year (Alot, 2021). Therefore, understanding factors affecting customer e-satisfaction and continuance intention to use MFOAs is critical for marketers and restaurant managers in today's highly competitive market.

Vietnam is a developing country where the online food ordering sector is still a new market. In 2020, the food delivery market size reached USD 586.9 million, and was expected to grow by 461% in the next 5 years (Statista, 2021b). Vietnamese restaurants have been considering mobile commerce apps as the most important channels to attract new customers and maintain current customer satisfaction (Dinh *et al.*, 2021). However, to the best of our knowledge, only a few studies have explored or addressed customer behavior regarding MFOAs in Vietnam. Therefore, it is crucial to investigate how such applications could impact on customers' perception, satisfaction and continuance intention of Vietnamese users, especially, during the COVID-19 pandemic.

In the world, previous studies on MFOAs have used various theoretical perspectives to investigate customer behavior intentions. For instance, a contingency framework was applied to examine the relationship between predictor variables (hedonic motivation, prior experience, time-saving orientation and

price saving) and outcome variables (e.g. convenience, motivation, attitude and behavior intention) (Gunden *et al.*, 2020; Yeo *et al.*, 2017). Besides, Cho *et al.* (2019) implemented quality attribute theory to investigate the relationship between independent factors including convenience, design, trustworthiness, price, various food choices and dependent factors (perceived value, attitudes, and intention to reuse). Technology Acceptance Model (TAM) was also used to predict customer intention in using MFOAs (Roh and Park, 2019). Recently, Alalwan (2020) has included online tracking, online rating, and online reviewing constructs in the extended unified theory of acceptance and use of technology (UTAUT 2) to examine customer continuance intention toward MFOAs. However, examining the issues related to MFOAs is still in the early stage (Okumus and Bilgihan, 2014; Wang *et al.*, 2019) and there is a need to discover the main dimensions that could hinder or contribute to the success of MFOAs implementation (Alalwan, 2020). Therefore, this study aims to investigate the driving factors of e-satisfaction and continuance intention of Vietnamese MFOAs users based on the Unified Theory of Acceptance and Use of Technology (UTAUT). Also, the moderating role of technical factor (online tracking) and personal factor (habit) was examined in this study.

The rest of this paper is organized as follows: Firstly, literature related to MFOA is presented in section 2. Next, the conceptual model is discussed, and the hypotheses are developed in section 3. Section 4 presents the research methodology applied in this study. Section 5 provides data analysis and hypotheses testing results. Finding discussion, theoretical contribution and managerial implication are all considered in section 6. Finally, the last section provides a research conclusion and discusses the research limitations as well as suggests some future research directions.

2. Conceptual framework and research development

2.1. Conceptual model

The study used a framework suggested by Venkatesh *et al.* (2012). Which will be proposed in the current study's model, presented in Figure 1. The model demonstrates the effect of four factors performance expectancy, effort expectancy, social influence and facilitating conditions on customer E-satisfaction and Continuance usage intention. In addition, customers' perceived E-satisfaction has a direct impact on continuance usage intention.
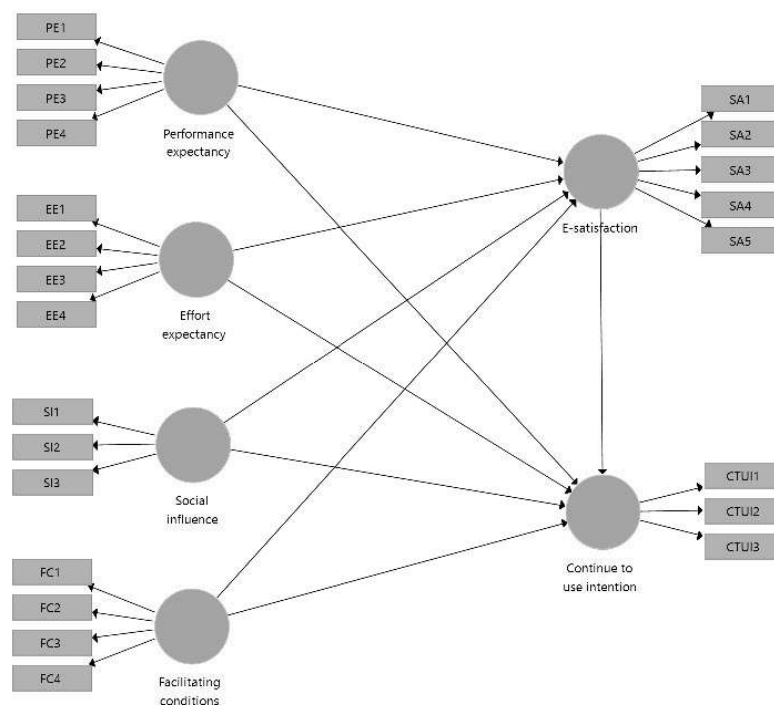
Figure 1: A study research framework

2.2. Performance Expectancy

Performance expectancy refers to the ability of online technology in helping customers attain what they need and want in a more convenient and productive way (Venkatesh et al., 2003). For instance, customers perceive performance expectancy as they can assess any restaurant at any time, any location, and can choose various kinds of foods through MFOAs without physical movement. When customers perceive higher performance expectances, they are more likely to be satisfied (Cho *et al.*, 2019; Okumus and Bilgihan, 2014; Shaw and Sergueeva, 2019; Wang *et al.*, 2019), and have more intention to reuse MFOAs (Dwivedi *et al.*, 2017; Sharma and Sharma, 2019; Tamilmani *et al.*, 2019). Accordingly, the following hypothesizes are proposed:

H1: Performance expectancy positively affects customer e-Satisfaction.
H2: Performance expectancy positively affects customer Continuance usage intention.

2.2. Effort expectancy

Effort expectancy is defined as the level of a person perceiving the system as easy to use (Venkatesh *et al.*, 2003), similar to TAM's ease of use construct. The complexity or the ease of use of MFOAs is reflected by the time and effort required from customers to interact with the MFOAs. When customers use MFOAs, and perceive the apps using experience in low effort and less complexity, they tend to be pleased with their experience of using such apps (Alalwan, 2020). Previous studies have found a positive relationship between these experiences and customer satisfaction in different contexts such as remote study (Kaewkitipong, *et al.,* 2016), mobile website area (Amin *et al.*, 2014), and online fashion industry (Qasem, 2021). Therefore, we proposed the hypothesis that:

H3: Effort expectancy positively affects customer e-satisfaction.

In addition, previous studies indicated that when customers use MFOAs, it requires them to complete all the procedure of ordering food without any helps from restaurant staff (Okumus *et al.*, 2018; Alagoz and Hekimoglu, 2012; Alalwan *et al.*, 2016; Okumus and Bilgihan, 2014). Thus, perceiving the ease of use and simplicity of these applications can significantly impact customer intention to reuse MFOAs.

H4: Effort expectancy positively affects customer Continuance usage intention.

2.3. Social influence

According to Venkatesh *et al.* (2003) social influence is defined as "the extent to which an individual perceives that important other believe he or she should apply the new system". Cheung and Lee (2009) investigated user intention to continue using a virtual community in higher education, findings indicated that the social influence and the roles of information technology affected user behaviors in exchanging information in the online community. In Vietnam, MFOA is a new coming technology and Vietnamese customers are not fully familiar with these technologies. Therefore, they could be affected by other users' opinions such as friends, family, colleagues, etc. (Alalwan *et al.*, 2017; Okumus *et al.*, 2018). In addition, customers will be more likely to get access to their social communities to acquire more information and extend their knowledge on the usage of these applications (Khalilzadeh *et al.*, 2017; Verkijika, 2018). Previous studies have found a positive relationship between social influence and customer intention to use mobile apps (Khalilzadeh *et al.*, 2017; Okumus *et al.*, 2018) and customer satisfaction (Gallarza and Saura, 2006; Hsiao *et al.*, 2016). Therefore, we proposed the following hypothesis:

H5: Social influence positively affects customer e-satisfaction.
H6: Social influence positively affects customer Continuance usage intention.

2.4. Facilitating conditions

Facilitating conditions are critical factors that have widely affected customer satisfaction and intention to use online applications in informatics technology and digital marketing research section (Alalwan, 2020). Customer satisfaction with the experience of using modern applications largely depends on the technical infrastructure and technical support (Venkatesh *et al.*, 2003). When using MFOAs, customers pay more attention to the quality of the apps as well as human support in these apps such as customer support service or delivery services. Previous studies have found a positive relationship between facility conditions and the

actual adoption of mobile banking apps (Alalwan *et al.*, 2017; Baabdullah *et al.*, 2019). In the health informatics context, facilitating conditions have been found positively affecting on customer satisfaction (Maillet *et al.*, 2015). This correlation is also indicated in the e-government context (Chan *et al.*, 2010). Based on the above discussion, we proposed the following hypothesis

H7: Facilitating conditions positively affect customer e-satisfaction.

H8: Facilitating conditions positively affect customer Continuance usage intention.

2.5. Customer e-satisfaction and Continuance usage intention

Various definitions regarding customer satisfaction have been found in previous studies. For instance, Oliver (1996) defined satisfaction as the "consumer's fulfillment response". Other studies stated that customer "satisfaction is a state in which he/she expectations match his/her perception of the actual service perceived" (Islam *et al.*, 2011; Radziszewska, 2013). E-satisfaction is more related to the attitudinal dimension of e-loyalty in both online and offline settings (Li *et al.*, 2015). Specifically, customer e-satisfaction dedicate to the level of joy that consumers feel when their purchase and post-purchase experience exceed their expectations (Kaya *et al.*, 2019). In this study, E-satisfaction is defined as customers' contentment with the experience that they have with a given e-commerce company (Anderson and Srinivasan, 2003).

Customer's continuance intention can be defined as a repurchase behavior or continuance to the use of products/services (Bhattacherjee, 2001). Customers are more likely to have a positive reaction and intention toward a new technology when they believe that using a particular innovation and technology will save more time and effort than the traditional one (Dwivedi *et al.*, 2017; Sharma and Sharma, 2019). In general IT services, such as online banking applications (Bhattacherjee, 2001) and smartphone banking services (Susanto *et al.*, 2016), continuance intention is more likely predicted by customers' perception of usefulness and ease of use of the technology they experienced.

The link between satisfaction and retention to use has been acknowledged in the literature. Many studies have demonstrated this relationship from different perspectives. For instance, in the field of online shopping (Trivedi and Yadav, 2018), hospitality management (Tran *et al.*, 2019), and education (Al-hawari and Mouakket, 2010). Recent studies in the field of online ordering apps also found the positive effect of e-satisfaction and continues use intention in Jordan (Alalwan, 2020). Therefore, we proposed the following hypothesis:

H9: E-satisfaction positively affects Continuance usage intention.

3. Research methodology

3.1. Measure

The scales to measure Performance expectance, Effort expectancy, Social influence, facilitating conditions and Continuance usage intention were originally proposed and validated by Venkatesh *et al.* (2003) and Venkatesh *et al.* (2012). Later, it was adopted and modified by Alalwan (2020) to use for the MFOA study. These scales were validated with high consistency and reliability. It consists of 18 items in total including 4 items for PE (Cronbach's alpha = 0.912), 4 items for EE (Cronbach's alpha = 0.933), 3 items for SI (Cronbach's alpha = 0.971), 4 items for FC (Cronbach's alpha = 0.866) and 3 items for CI (Cronbach's alpha = 0.974). Therefore, this research adopted these scales from Alalwan (2020). In addition, measurement scale used for E-satisfaction was also adopted from Alalwan (2020) as it demonstrated a very good validity and reliability (Cronbach's alpha = 0.942, Composite reliability = 0.943 and Average variance extracted = 0.847).

However, as Vietnam is a non-English speaking country, the scales were translated into Vietnamese and a pilot test with a sample of 100 MFOA users was also conducted to ensure the clarity and readability of the questionnaire used for the survey. The 7-point Likert scale was implemented for measurement and the participants were asked to respond to each statement by rating from 1= "totally disagree" to 7= "totally agree".

3.2. Participants and data collection

Vietnam is a developing country that is experiencing a booming online food delivery market. The average growth rate of this sector was approximately 38% during the period of time from 2014 to 2019 (Bui, 2021). And the total market size of online food delivery services in Vietnam was estimated to reach $38 million in 2021. Although the development of food delivery industry is significant, there are only 5 main mobile food ordering applications popuplarly used in Vietnam so far including Grab Food, Now, Baemin, Go Food/ Go Jek and Loship (Statista, 2020). The services of these apps are available in only 3 main cities in Vietnam (Ha Noi, Da Nang and Ho Chi Minh) (Alongwalker, 2022). Therefore, this research chose Ho Chi Minh city, the second biggest city in Vietnam, for data collection because of the availability of services and the limitation of approaching appropriate respondents.

According to Hoe (2008), the sample size for empirical research should be larger than 200 to achieve adequate statistical power for data analysis. In addition, Hair *et al.* (2019) suggested the sample size should follow the formula: $N = 10 \times m$ in which m is the number of measurement items. This research uses 23 measuring items thus the appropriate sample size is 230.

This study deployed an online survey. The snowball technique, one of the four non-probability sampling techniques, was implemented for sample selection. A questionnaire was made on Google form and sent to the participants. In order to ensure the right respondents were selected, the questionnaire starts with the question "Have you ever used a Mobile Food Ordering Application such as: Grab food; Foody; Baemin, etc.". If the respondents choose "No" the form is automatically sent, and they do not have to answer the rest questions. Each of respondent was also asked to forward the link of survey to their friends to expand the sample size. There were 373 responses received via online survey. After data cleaning, a sample of 341 was qualified and used for analysis.

3.2. Data analysis

This research implemented partial least squares structural equation modelling (PLS-SEM) to analyze data. PLS-SEM has been used widely in the top marketing journals and was demonstrated to be more appropriate for predicting and identifying key driver constructs (Hair *et al.,* 2014). In addition, a bootstrapping test with 5,000 subsamples recommended by *Hair et al.* (2014) was also conducted to examine the significance of coefficients such as outer loadings, outer weights and path coefficients.

3.3. Common method variance

As data were collected by self-report questionnaires and from a single source, common method variance (CMV) may present. CMV potentially leads to bias in the validity of results. To address such an issue, this research employed two statistical tests: Harman's single-factor (Podsakoff and Organ 1986) and Variance Inflation Factor (VIF) index (Kock, 2015). (1) Result of Harman's single-factor test revealed that one single factor explains 49.42% of the variance (less than the threshold of 50%). (2) All factors at the factor level have the VIFs of less than 3.3. Therefore, CMV may not present in this research.

4. Results

4.1. Measurement model evaluation

There are two criteria applied to evaluate the measurement model including reliability and validity. Firstly, Cronbach's alpha, composite reliability (CR) and average variance extracted (AVE) were applied to evaluate the reliability of measurement and the convergent validity of each construct. Data analysis showed that all constructs have Cronbach's alpha value higher than 0.8 and CR values ranging from 0.893 to 0.942 above the threshold of 0.7 (Hair *et al.*, 2019). Besides, the results also illustrated that all AVE values were higher than the requirement of 0.5 (table 1). Thus, the reliability and convergent validity were established.

Table 1: Construct reliability and validity

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
CI	0.824	0.824	0.895	0.740
E-satisfaction	0.923	0.923	0.942	0.764
EE	0.849	0.849	0.898	0.688
FC	0.839	0.840	0.893	0.675
PE	0.847	0.850	0.897	0.686
SI	0.877	0.877	0.924	0.802

Secondly, the discriminant validity was examined by using the heterotrait–monotrait (HTMT) ratio (Henseler *et al.*, 2015) and Fornell and Larcker's (1981) criterion. The discriminant validity is achieved when the HTMT ratio is lower than 0.9 (Henseler *et al.*, 2015) or the square root of AVE of each latent variable is higher than its correlation with any other construct (Fornell and Larcker, 1981). The discriminant test indicated the HTMT ratios were below the threshold of 0.9 (table 2). In addition, each latent construct had the square root of EVA greater than its correlation with other constructs in the measurement model (table 3). Therefore, discriminant validity was achieved.

Table 2: Discriminant validity - Heterotrait-Monotrait Ratio (HTMT)

	CI	**E-satisfaction**	**EE**	**FC**	**PE**	**SI**
CI						
E-satisfaction	0.881					
EE	0.628	0.726				
FC	0.714	0.753	0.814			
PE	0.748	0.711	0.655	0.763		
SI	0.736	0.589	0.559	0.620	0.741	

Table 3: Discriminant validity - Fornell and Larcker's criterion

	CI	**E-satisfaction**	**EE**	**FC**	**PE**	**SI**
CI	0.860					
E-satisfaction	0.770	0.874				
EE	0.528	0.643	0.829			
FC	0.596	0.663	0.688	0.822		
PE	0.627	0.632	0.561	0.647	0.828	
SI	0.625	0.529	0.483	0.532	0.637	0.896

4.2. Structural model evaluation

This research implemented the procedure proposed by Hair *et al.* (2019) to evaluate the structural model. Hair *et al.* (2019) suggested that variance inflation factor (VIF), R^2 value and Q^2 value should be used to assess the structural model. Analysis showed that all the variables had VIF coefficients less than the required cut-off value of 5.0 (table 4). Therefore, multicollinearity was not an issue. Secondly, E-satisfaction and IC had R^2 values of 0.559 and 0.665 respectively demonstrating that the model explains 55.9% of E-satisfaction and 66.5% of continuance intention. Lastly, research employed a blindfolding procedure to test the Q^2 value and the results showed that both E-satisfaction and IC had large predictive relevance of PLS-path model with Q^2 values of 0.42 and 0.48 respectively (above 0.35).

Table 4: Collinearity statistics

		VIF
Continuance Intention (CI)	CTUI1	1.593

	CTUI2	2.094
	CTUI3	2.266
Effort Expectancy (EE)	EE1	1.936
	EE2	2.011
	EE3	1.721
	EE4	2.005
Facilitating Conditions (FC)	FC1	1.905
	FC2	1.956
	FC3	2.225
	FC4	1.539
Performance Expectancy (PE)	PE1	1.651
	PE2	2.464
	PE3	2.039
	PE4	1.797
E-Satisfaction	SA1	2.694
	SA2	2.889
	SA3	2.476
	SA4	2.933
	SA5	2.978
Social Influence (SI)	SI1	2.074
	SI2	2.601
	SI3	2.772

This research also conducted a bootstrapping test with 5,000 subsamples to examine the significance level of path coefficients. The result demonstrated that performance expectancy, effort expectancy, social influence and facilitating conditions had positive and significant effect on E-satisfaction ($\beta = 0.243$, $\beta = 0.278$, $\beta = 0.101$, $\beta = 0.260$ respectively and all p-values < 0.05) supporting for H1, H2, H3 and H4 (table 5). Bootstrapping test also revealed that social influence had a positive and significant relationship with continuance intention ($\beta = 0.259$, $p < 0.01$). However, the performance expectancy, effort expectancy and facilitating conditions did not show a significant impact on continuance intention ($p >= 0.05$). Thus, H7 was supported while H5, H6 and H8 were not supported in this research. Lastly, H9 was supported as E-satisfaction positively and significantly influenced on continuance intention ($\beta = 0.572$, $p < 0.01$).

| Path	H	β	SE	P Values	Decision
Table 5: Result of structural model analysis					
PE -> E-satisfaction	H1	0.243	0.060	0.000	Supported
EE -> E-satisfaction	H2	0.278	0.054	0.000	Supported
SI -> E-satisfaction	H3	0.101	0.046	0.026	Supported
FC -> E-satisfaction	H4	0.260	0.061	0.000	Supported
PE -> CI	H5	0.097	0.050	0.052	Not supported
EE -> CI	H6	-0.058	0.060	0.341	Not supported
SI -> CI	H7	0.259	0.045	0.000	Supported
FC -> CI	H8	0.056	0.071	0.432	Not supported
E-satisfaction -> CI	H9	0.572	0.058	0.000	Supported
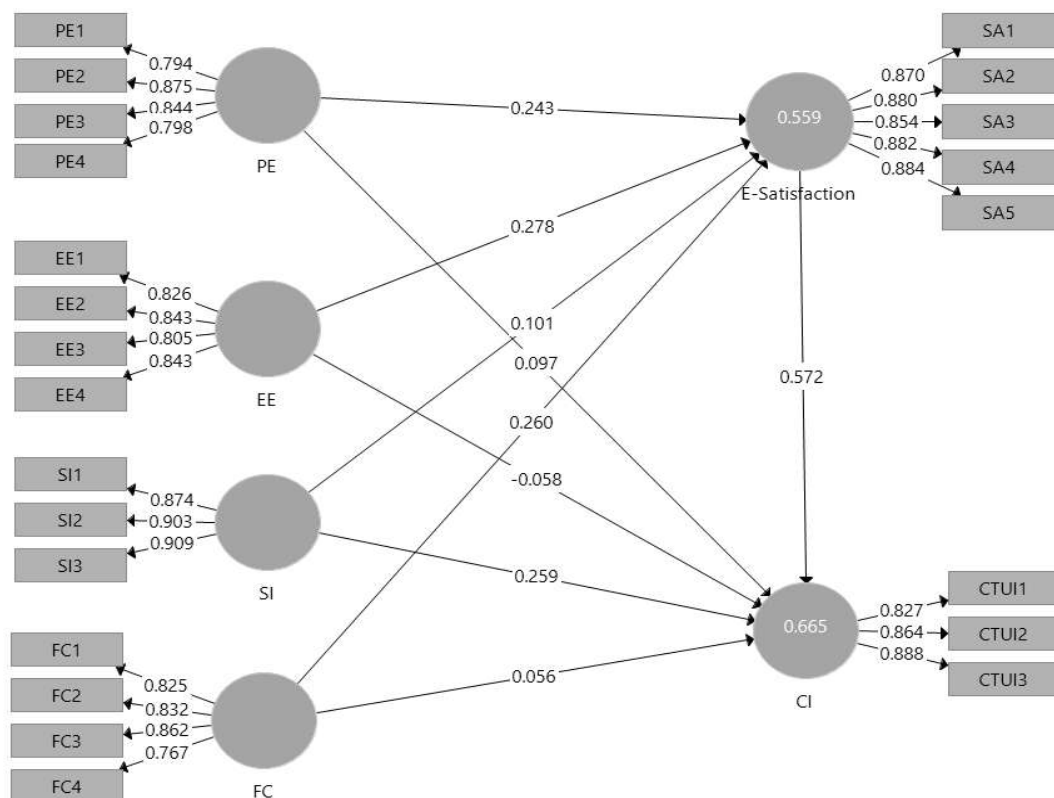
Figure 2: The structural model

An extensive analysis that examined the mediation role of E-satisfaction was also conducted. The result showed that E-satisfaction played a mediation role in the relationship between performance expectancy, effort expectancy, social influence, facilitating conditions and continuance intention (table 6).

Table 6: Result of indirect effect analysis

	β	SE	P Values
PE -> E-satisfaction -> CI	0.139	0.037	0.000
FC -> E-satisfaction -> CI	0.149	0.037	0.000
SI -> E-satisfaction -> CI	0.058	0.027	0.031
EE -> E-satisfaction -> CI	0.159	0.032	0.000

5. Discussion

This study aimed to examine the factors that could shape users' e-satisfaction and intention to continue to use online food ordering applications in Vietnam. The empirical result supported the proposed research model, which was able to capture an adequate level of predictive validity with 0.559 and 0.665 of variance accounted for customer e-satisfaction and customer intention to use MFOAs respectively. In addition, the model meets the criteria pertaining to model fitness.

Given the intensive competitive pressure in food sectors, online food application offers restaurants a unique opportunity to sell foods to customers which are different from traditional food service. Through the MFOAs, restaurants can enhance customer satisfaction and Continuance usage intention. The findings show that performance expectancy direct effect customer e-satisfaction. Customers are more satisfied when they perceived online technology as helping them to attain what they need and want in a more convenient and productive way. The results are in the line with extant research (Cho *et al.*, 2019; Okumus and Bilgihan, 2014; Shaw and Sergueeva, 2019; Wang *et al.*, 2019). In addition, the study finding also confirmed the positive effect of effort expectancy on customer satisfaction when using MFOAs and this is consistent with previous findings (Kaewkitipong *et al.*, 2016; Amin *et al.*, 2014; Alalwan, 2020). Users are more likely to be satisfied with their experience of using mobile MFOAs if they feel that these apps are easy to use. In contrast with previous studies (Khalilzadeh *et al.*, 2017), this study confirmed the role of social influence in predicting the e-satisfaction of using MFOAs. Customers largely rely on the opinions and suggestions of others in their using such a novel system. Especially in developing countries like Vietnam while buying online is still a new concept. Moreover, facilitating conditions are an important aspect in enhancing customer e-satisfaction (Venkatesh *et al.*, 2003).

Interestingly, when considering the factors affecting customer intention to use MFOAs, only social influence and customer e-satisfaction have a significant effect on customer intention to reuse, which is in the line with previous studies (Khalilzadeh *et al.*, 2017; Okumus *et al.*, 2018). Performance expectancy, effort expectancy and facilitating conditions showed no direct effect on customer reuse intention towards MFOAs. However, these factors have an indirect effect on continuance intention through customer e-satisfaction. These findings are different from the previous findings of Alalwan (2020). The possibility to explain this phenomenon is that a high percentage of Vietnamese customers lack trust in online shopping (Ha *et al.*, 2021). Therefore, when customers order food online, if they first perceive satisfaction then it will lead to reuse behaviors.

This study provides important theoretical implications on the aspect of MFOAs, especially in Vietnam where only a limited number of studies have tested issues related to MFOAs. Therefore, this study makes a valuable contribution by expanding the current understanding regarding the main aspects that impact the success of implementing MFOAs either in Vietnam or globally. Another contribution of this study is that it focuses on investigating the factors affecting e-satisfaction and customer continuance intention based on the predicting variables including performance expectancy, effort expectancy, facilitating conditions and social influence. These predicting variables are different from previous studies (Cho *et al.*, 2019; Gunden *et al.*, 2020; Roh and Park, 2019; Yeo *et al.*, 2017) which focused on testing aspects of customer intention and initial adoption (eg. TAM, contingency framework).

The study's findings have critical practical implications in the restaurant industry, especially for managers doing online food marketing in developing countries like Vietnam. The study indicates the main factors that should be considered in designing marketing on MFOAs. For instance, effort expectancy plays a critical role in achieving customer e-satisfaction. Therefore, marketers should focus more on the role of

effort expectancy when doing promotional campaigns to convince customers to use online food ordering apps. For instance, marketing campaigns may focus on explaining how the apps are easy to use, with the apps there are no physically visiting or phone calls making required to make the food order.

Besides, online marketers should work on the aspects that increase customer satisfaction such as performance expectancy, facilitating conditions, and social influence. These factors will lead to high customer satisfaction; customers satisfied with their online food ordering experience will continue to use online food ordering apps. To increase both customer satisfaction and their app reuse intention, marketers should pay attention to the role of social influence. Some marketing strategies stimulating referral behaviors can be deployed to increase social influence. For example, customers can get discounts or vouchers if they invite friends to use mobile food ordering applications.

6. Conclusion and limitation

This study attempts to provide more knowledge regarding factors that could shape customer satisfaction and continue intention to use MFOAs. The model was proposed to test the relationship between each variable. The findings indicated that e-satisfaction was supposed to be predicted by performance expectancy, effort expectancy, facility conditions, and social influence. However, these factors did not directly affect Continuance usage intention MFOAs but indirectly affected through customer e-satisfaction, except for the social influence factor. These findings provided significant theoretical and practical contributions to the field of the online food industry. This study also contributes to enhancing the current understanding of MFOAs, especially in Vietnam.

Besides the significant contributions, this study has several limitations that could be addressed in further studies. First, the current study is cross-sectional to measure study variables. However, given the transitory and changing nature of customer perception, this is the key limitation of the study. Therefore, future research could map the dynamism of these measures by conducting a longitudinal study to increase the generalizability of the results. Second, this study did not consider other factors that affect customer satisfaction and Continuance usage intention such as online system start rating, price value, and hedonic motivation which was commonly used in studying customer e-satisfaction (Heng *et al.*, 2018; Alalwan, 2020). Therefore, future studies should consider these factors in the research model. Lastly, this study did not consider the effect of cultural factors (eg. eating habits, health consciousness, and lifestyle). Thus, future studies could consider these aspects to enrich the current understanding of the main factors that support the success of online food ordering applications.

References

Alagoz, S. M. and Hekimoglu, H. (2012), "A study on tam: analysis of customer attitudes in online food ordering system", *Procedia-Social and Behavioral Sciences*, Vol. 62, pp. 1138-1143.

Alalwan, A.A. (2020), "Mobile food ordering apps: An empirical study of the factors affecting customer e-satisfaction and continued intention to reuse"*, International Journal of Information Management,* Vol. 50, pp. 28-44.

Alalwan, A. A., Dwivedi, Y. K. and Rana, N. P. (2017), "Factors influencing adoption of mobile banking by Jordanian bank customers: Extending UTAUT2 with trust", *International Journal of Information Management*, Vol. 37 No. 3, pp. 99-110.

Alalwan, A. A., Dwivedi, Y. K., Rana, N. P., and Williams, M. D. (2016), "Consumer adoption of mobile banking in Jordan: Examining the role of usefulness, ease of use, perceived risk and self-efficacy", *Journal of Enterprise Information Management,* Vol. 29 No. 1, pp. 118-139.

Al-hawari, M. A., and Mouakket, S. (2010), "The influence of technology acceptance model (TAM) factors on students'e-satisfaction and e-retention within the context of UAE e-learning", *Education, Business and Society: Contemporary Middle Eastern Issues,* Vol. 3 No. 4, pp. 299-314.

Alongwalker (2022), *"Save these 05 food delivery apps in Vietnam to your travel list".* Retrieved from https://vn.alongwalker.co/save-these-05-food-delivery-apps-in-vietnam-to-your-travel-list-s305339.html. Accessed 14 November. 2022.

.

Alot. (2021), "*Online food delivery market to hit $151.5B in revenue and 1.6B users in 2021, a 10% jump in a year*". Retrieved from https://ajot.com/news/online-food-delivery-market-to-hit-151.5b-in-revenue-and-1.6b-users-in-2021-a-10-jump-in-a-year. Accessed 10 March. 2022.

Amin, M., Rezaei, S., and Abolghasemi, M. (2014), "User satisfaction with mobile websites: the impact of perceived usefulness (PU), perceived ease of use (PEOU) and trust", *Nankai Business Review International,* Vol. 5 No. 3, pp. 258-274.

Anderson, R. E., and Srinivasan, S. S. (2003), "E-satisfaction and e-loyalty: A contingency framework", *Psychology and marketing*, Vol. 20 No. 2, pp. 123-138.

Baabdullah, A. M., Alalwan, A. A., Rana, N. P., Kizgin, H., and Patil, P. (2019), "Consumer use of mobile banking (M-Banking) in Saudi Arabia: Towards an integrated model", *International Journal of Information Management*, Vol. 44, pp. 38-52.

Bhattacherjee, A. (2001), "Understanding information systems continuance: An expectation-confirmation model", *MIS quarterly,* Vol. 25 No. 3, pp. 351-370.

Chan, F. K., Thong, J. Y., Venkatesh, V., Brown, S. A., Hu, P. J., and Tam, K. Y. (2010), "Modeling citizen satisfaction with mandatory adoption of an e-government technology", *Journal of the association for information systems*, Vol. 11 No. 10, pp. 519-549.

Cheung, C.M., and Lee, M.K. (2009), "Understanding the sustainability of a virtual community: model development and empirical test", *Journal of Information Science*, Vol. 35 No. 3, pp. 279-298.

Cho, M., Bonn, M. A., and Li, J. J. (2019), "Differences in perceptions about food delivery apps between single-person and multi-person households", *International Journal of Hospitality Management*, Vol. 77, pp. 108-116.

Linh, D. H., Dung, N. D., Son, H.N., and Kingsbury, A. (2021), "The responses of consumers to the online ordering and delivery of meals by restaurants during COVID-19: A case study of Thai Nguyen City, Vietnam", *Journal of Electronic Commerce in Organizations (JECO)*, Vol. 19 No. 3, pp. 65-84.

Dwivedi, Y. K., Rana, N. P., Janssen, M., Lal, B., Williams, M. D., and Clement, M. (2017), "An empirical validation of a unified model of electronic government adoption (UMEGA)", *Government Information Quarterly*, Vol. 34 No. 2, pp. 211-230.

Fornell, C., and Larcker, D. F. (1981), "Evaluating structural equation models with unobservable variables and measurement error", *Journal of marketing research*, Vol. 18 No. 1, pp. 39-50.

Gallarza, M. G., and Saura, I. G. (2006), "Value dimensions, perceived value, satisfaction and loyalty: an investigation of university students' travel behaviour", *Tourism management*, Vol. 27 No. 3, pp. 437-452.

Gunden, N., Morosan, C., and DeFranco, A. (2020), "Consumers' intentions to use online food delivery systems in the USA", *International Journal of Contemporary Hospitality Management*, Vol. 32 No. 3, pp. 1325-1345.

Ha, N. T., Nguyen, T. L. H., Pham, T. V., and Nguyen, T. H. T. (2021), "Factors influencing online shopping intention: An empirical study in Vietnam", *The Journal of Asian Finance, Economics and Business*, Vol. 8 No. 3, pp. 1257-1266.

Hair, J. F., Risher, J. J., Sarstedt, M., and Ringle, C. M. (2019), "When to use and how to report the results of PLS-SEM", *European business review,* Vol. 31 No. 1, pp. 2-24.

Heng, Y., Gao, Z., Jiang, Y., and Chen, X. (2018), "Exploring hidden factors behind online food shopping from Amazon reviews: A topic mining approach", *Journal of Retailing and Consumer Services,* Vol. 42, pp. 161-168.

Henseler, J., Ringle, C.M. and Sarstedt, M. (2015), "A new criterion for assessing discriminant validity in variance-based structural equation modeling", *Journal of the Academy of Marketing Science,* Vol. 43 No. 1, pp. 115-135.

Hoe, S. L. (2008), "Issues and Procedures in Adopting Structural Equation Modeling Technique", *Journal of Applied Quantitative Methods*, Vol. 3, pp. 76-83.

Hsiao, C. H., Chang, J. J., and Tang, K. Y. (2016), "Exploring the influential factors in continuance usage

of mobile social Apps: Satisfaction, habit, and customer value perspectives", *Telematics and Informatics*, Vol. 33 No. 2, pp. 342-355.

Islam, M. A., Khadem, M. M. K., and Alauddin, M. (2011), "An empirical assessment of the relationship between service quality and customer satisfaction in fashion house", In *Proceedings of the 2011 International Conference on Industrial Engineering and Operations Management Kuala Lumpur, Malaysia*, pp. 201-206.

Kaewkitipong, L., Chen, C. C., and Ractham, P. (2016), "Using social media to enrich information systems field trip experiences: Students' satisfaction and continuance intentions", *Computers in Human Behavior*, Vol. 63, pp. 256-263.

Kaya, B., Behravesh, E., Abubakar, A. M., Kaya, O. S., and Orús, C. (2019), "The moderating role of website familiarity in the relationships between e-service quality, e-satisfaction and e-loyalty", *Journal of Internet Commerce*, Vol. 18 No. 4, pp. 369-394.

Khalilzadeh, J., Ozturk, A. B., and Bilgihan, A. (2017), "Security-related factors in extended UTAUT model for NFC based mobile payment in the restaurant industry", *Computers in Human Behavior*, Vol. 70, pp. 460-474.

Kock, N. (2015), "Common method bias in PLS-SEM: A full collinearity assessment approach", *International Journal of e-Collaboration (ijec)*, Vol. 11 No. 4, pp. 1-10.

Li, H., Aham-Anyanwu, N., Tevrizci, C., and Luo, X. (2015), "The interplay between value and service quality experience: E-loyalty development process through the ETailQ scale and value perception", *Electronic Commerce Research,* Vol. 15 No. 4, pp. 585–615.

Maillet, É., Mathieu, L., and Sicotte, C. (2015), "Modeling factors explaining the acceptance, actual use and satisfaction of nurses using an Electronic Patient Record in acute care settings: An extension of the UTAUT", *International journal of medical informatics*, Vol. 84 No. 1, pp. 36-47.

Okumus, B., and Bilgihan, A. (2014), "Proposing a model to test smartphone users' intention to use smart applications when ordering food in restaurants", *Journal of Hospitality and Tourism Technology,* Vol. 5 No. 1, pp. 31–49.

Okumus, B., Ali, F., Bilgihan, A., and Ozturk, A. B. (2018), "Psychological factors influencing customers' acceptance of smartphone diet apps when ordering food at restaurants", *International Journal of Hospitality Management*, Vol. 72, pp. 67-77.

Oliver, R. L. (1996), "Varieties of value in the consumption satisfaction response", *Advances in Consumer Research,* Vol. 23*,* pp. 143-147.

Qasem, Z. (2021), "The effect of positive TRI traits on centennials adoption of try-on technology in the context of E-fashion retailing", *International Journal of Information Management*, Vol. 56, pp. 1-11.

Podsakoff, P. M., and Organ, D. W. (1986), "Self-reports in organizational research: Problems and prospects", *Journal of Management*, Vol. 12 No. 4, pp. 531-544.

Radziszewska, A. (2013), "Assessment of customer's satisfaction in e-commerce services", *Polityki Europejskie, Finanse i Marketing,* Vol. 58 No. 9, pp. 383-393.

Roh, M., and Park, K. (2019), "Adoption of O2O food delivery services in South Korea: The moderating role of moral obligation in meal preparation", *International Journal of Information Management,* Vol. 47*,* pp. 262-273.

Sharma, S. K., and Sharma, M. (2019), "Examining the role of trust and quality dimensions in the actual usage of mobile banking services: An empirical investigation", *International Journal of Information Management*, Vol. 44, pp. 65-75.

Shaw, N., and Sergueeva, K. (2019), "The non-monetary benefits of mobile commerce: Extending UTAUT2 with perceived value", *International Journal of Information Management*, Vol. 45, pp. 44-55.

Statista. (2020), *Most used food delivery apps among consumers in Vietnam in 2020.* Retrieved from https://www.statista.com/statistics/1010081/vietnam-most-popular-food-delivery-portals/

Statista. (2021a), *Number of digital buyers worldwide from 2014-2021.* Retrieved from https://www.statista.com/statistics/251666/number-of-digital-buyers-

worldwide/#:~:text=Global%20number%20of%20digital%20buyers%202014%2D2021andtext=In %202021%2C%20over%202.14%20billion,global%20digital%20buyers%20in%202016.&text=Pu rchasing%20goods%20and%20services%20online,many%20people%20around%20the%20world. Accessed March 15. 2022.

Statista. (2021b), *Online food delivery market size Vietnam 2016-2025.* Retrieved from https://www.statista.com/statistics/1264461/vietnam-online-food-delivery-market-size/#:~:text=In%202020%2C%20the%20market%20size,of%20the%20COVID%2D19%20pande mic. Accessed March 15. 2022.

Susanto, A., Chang, Y., and Ha, Y. (2016), "Determinants of continuance intention to use the smartphone banking services: An extension to the expectation-confirmation model", *Industrial Management & Data Systems*, Vol. 116 No. 3, pp. 508-525.

Tamilmani, K., Rana, N. P., Prakasam, N., and Dwivedi, Y. K. (2019), "The battle of Brain vs. Heart: A literature review and meta-analysis of "hedonic motivation" use in UTAUT2", *International Journal of Information Management*, Vol. 46, pp. 222-235.

Tran, L. T. T., Pham, L. M. T., and Le, L. T. (2019), "E-satisfaction and continuance intention: The moderator role of online ratings*", International Journal of Hospitality Management,* Vol. 77*,* pp. 311-322.

Trivedi, S. K., and Yadav, M. (2018), "Predicting online repurchase intentions with e-satisfaction as mediator: a study on Gen Y", *VINE Journal of Information and Knowledge Management Systems,* Vol. 48 No. 3, pp. 427-447.

Venkatesh, V., Morris, M. G., Davis, G. B., and Davis, F. D. (2003), "User acceptance of information technology: Toward a unified view", *MIS quarterly,* Vol. 27 No. 3, pp. 425-478.

Venkatesh, V., Thong, J. Y., and Xu, X. (2012), "Consumer acceptance and use of information technology: extending the unified theory of acceptance and use of technology", *MIS quarterly,* Vol. 36 No. 1, pp. 157-178.

Verkijika, S. F. (2018), "Factors influencing the adoption of mobile commerce applications in Cameroon", *Telematics and Informatics*, Vol. 35 No. 6, pp. 1665-1674.

Wang, W. T., Ou, W. M., and Chen, W. Y. (2019), "The impact of inertia and user satisfaction on the continuance intentions to use mobile communication applications: A mobile service quality perspective", *International Journal of Information Management*, Vol. 44, pp. 178-193.

Yeo, V. C. S., Goh, S. K., and Rezaei, S. (2017), "Consumer experiences, attitude and behavioral intention toward online food delivery (OFD) services", *Journal of Retailing and Consumer Services,* Vol. 35, pp. 150–162.

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