

Determinants of Customer Satisfaction and Intention to Reuse Mobile Food Ordering Apps Among Vietnamese Consumers

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ABSTRACT

The article utilizes a quantitative method to study the factors influencing consumer satisfaction and intention to continue using food delivery applications on mobile devices in Vietnam. The research team applies a research model based on the extended Unified Theory of Acceptance and Use of Technology (UTAUT2) and adds four factors to suit the Vietnamese market: Online Reviews, Online Positioning, Perceived Risk, and Innovativeness. The research results show that satisfaction and the intention to continue ordering food via mobile applications are influenced by key factors such as social influence, hedonic motivation, price, online reviews, and online positioning. These findings suggest several important managerial implications for online food service providers.

KEYWORDS

Satisfaction; Intention to Continue Using; Extended Unified Theory of Acceptance and Use of Technology; Food Delivery Applications on Mobile Devices; Mobile Applications

1. INTRODUCTION

Mobile food ordering applications are designed to be compatible and usable on electronic devices such as smartphones with internet connectivity, allowing users to search for, order food directly from sellers, and view food brands with displayed prices.

The Vietnamese market is a potential ground for the development of the online food delivery technology sector. In 2019, Vietnam recorded 43.7 million mobile device users, accounting for 44.9% according to the Vietnam digital advertising market report. The digitization technology on application software is becoming increasingly popular, and online food ordering apps have shown significant potential in this trend. Currently, the Vietnamese online food delivery market is fiercely competitive with five main brands: GrabFood, Now, Beamin, GoFood, and Loship.

Despite the growing popularity of mobile food ordering applications, academic research related to this type of application is still relatively scarce. Therefore, this article aims to specifically identify the nature and role of factors affecting consumer satisfaction and their intention to continue using online food ordering apps in Vietnam.

2. LITERATURE REVIEW

2.1. Studies on Mobile Food Ordering Application in Viet Nam and Globally

Humanity around the world has been witnessing the explosion of mobile applications. This explosion has spread to the online food delivery industry. However, academic studies related to this type of

application are still relatively few (Okumus & Bilgihan, 2014). No research has yet provided a concept of mobile food ordering applications but only focused on analysis from the customer's perspective. Managers and operators of restaurants are increasingly understanding the importance of food ordering apps as these applications can help them improve service quality, increase customer satisfaction and loyalty (Okumus & Bilgihan, 2014).

For users to accept mobile food ordering applications, Okumus and Bilgihan (2014) proposed several main predictors, specifically interest in perception, usefulness, accuracy, efficiency, and ease of use, based on the Technology Acceptance Model (TAM). Meanwhile, to determine the main predictors of customers' intention to continue using mobile food ordering applications, Yeo et al. (2017) built their model based on the contingency framework and extended IT Continuance model, asserting that as long as customers perceive the use of online food ordering apps as fun, interesting, useful, and making their daily lives easier, they are more likely to form a positive attitude and be willing to continue using the app.

In Vietnam, most previous studies on mobile applications in general and food delivery applications, in particular, only addressed aspects related to the intention to use and initial acceptance of Vietnamese consumers (Hà, 2016). However, the study by Lê & Nguyễn (2021) examined customer satisfaction and their intention to continue using mobile food ordering applications, but the study subjects only focused on Millennials - a specific age group with distinct characteristics, habits, and shopping motivations (European Union, 2020). Therefore, our research aims to fill this research gap by building a model to test the factors affecting the intention to continue using mobile food ordering applications among Vietnamese customers.

2.2. Research Model and Hypotheses on Mobile Food Ordering Applications

In this paper, we propose a research model (as below) based on the foundation of the extended Unified Theory of Acceptance and Use of Technology (UTAUT2), primarily based on Venkatesh's UTAUT2 model from 2012, but adjusted to fit Vietnamese conditions with four additional factors (Online review, Online tracking, Perceived risk, and Personal innovativeness).

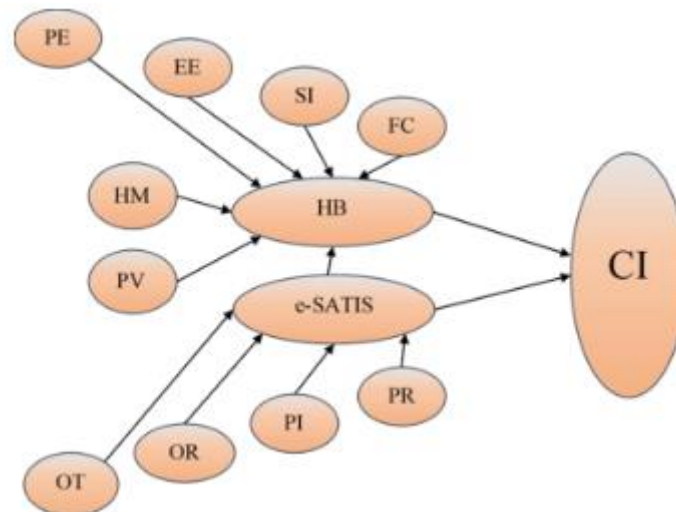


Figure 1. Proposed Research Model

The basis for selecting and hypothesizing variables is presented as follows:

Performance expectancy is the degree to which an individual believes that using a mobile food ordering application will help them achieve work performance benefits (Venkatesh et al., 2003). Customers will respond positively and tend to order food more often on the app if they find that the usefulness of ordering food through the app is greater than traditional food ordering methods (Venkatesh et al., 2003).

H1. Performance expectancy (PE) positively affects customers' habits of using mobile food ordering applications.

Effort expectancy is the ease associated with using new systems or technologies that potential customers may perceive (Venkatesh et al., 2003). We predict that the intention to use mobile food ordering applications may partly depend on the extent to which customers find the application easy to use and not complicated.

H2. Effort expectancy (EE) positively affects customers' habits of using mobile food ordering applications.

Social influence is defined as the degree to which an individual perceives that important others believe they should use the new system (Venkatesh et al., 2003). Because mobile food ordering applications have been introduced only in the last three years, Vietnamese consumers are not yet familiar with ordering food on this technological platform; thus, they are primarily influenced by those around them who have significant influence (family members, friends, colleagues, peers, leaders) (Okumus et al., 2018).

H3. Social influence (SI) positively impacts customers' usage habits when using food delivery apps on mobile devices.

According to the study by Venkatesh et al. (2003), facilitating conditions are defined as the degree of availability of technical infrastructure and the support of a group of staff guiding the use of the system when the user requires it. Food delivery apps on mobile devices are a type of software installed for use on smartphones, which users cannot fully utilize without an internet connection, specifically a 4G service, and even require a team of staff to assist with usage.

H4. Facilitating conditions (FC) positively impact customers' usage habits of food delivery apps on mobile devices.

Emotional motivation is understood as the enjoyment and fun derived from using a technological application system, and it has been shown to play an important role in determining technology acceptance and usage intention. As long as the use of this application is perceived as new and innovative, it will easily generate enjoyment when using these new applications (Okumus et al., 2018). Okumus and Bilgihan (2014) found that this enjoyment is associated with customers' willingness to continue using food delivery apps on mobile devices.

H5. Hedonic motivation (HM) positively impacts customers' usage habits of food delivery apps on mobile devices.

Price refers to the financial costs associated with using new products and systems. Consumers tend to compare the benefits of using a new technological application with the costs incurred (Alalwan, Dwivedi, and Rana, 2017). According to Venkatesh et al. (2012), price is one of the most influential factors affecting the intention to continue using internet-connected services on mobile devices.

H6. Price value (PV) positively impacts customers' usage habits of food delivery apps on mobile devices.

Online reviews are a form of word-of-mouth marketing posted on online platforms, and these reviews serve as a useful source of information for subsequent consumers when selecting dishes and evaluating alternatives. As long as customers have access to reliable, comprehensive, up-to-date, and relevant reviews, they tend to respond more positively to the online platform (Filieri, 2015).

H7. Online reviews (OR) positively impact customer satisfaction when using food delivery apps on mobile devices.

Online tracking is a novel feature that allows both sellers and buyers to track the delivery journey. Online tracking typically comes with features such as: location pinpointing, arrow indicators for

tracking, payment status, and order tracking status; helping customers save time and energy when ordering food.

H8. Online tracking (OT) positively impacts customer satisfaction when using food delivery apps on mobile devices.

The ability to innovate is understood as the extent to which an individual adopts a new idea relatively early compared to those around them in their social circle (Rogers, 2003). Some consumers will be willing to take risks by trying out a new app system, while others may feel hesitant and reluctant to change their consumption behavior.

H9. The ability to innovate (PI) positively impacts customer satisfaction when using food delivery apps on mobile devices.

Perceived risk in shopping is seen as the uncertainty of consumers' decisions and their potential consequences. When ordering food through food delivery apps on mobile devices, users often perceive a higher level of risk compared to traditional food ordering methods because they cannot see the product directly and do not have direct interaction with sales staff (Park and Stoel, 2005).

H10. Perceived risk (PR) negatively impacts customer satisfaction when using food delivery apps on mobile devices.

According to Ajzen and Fishbein (2005), customers' past experiences and interactions can shape their perceptions and attitudes, thus predicting their intention to repeat actions similar to those in the past. In other words, as long as consumers are satisfied with their experience using food delivery apps on mobile devices, they will continue to use this app as a habit.

H11. Satisfaction (E-SATIS) positively impacts customers' usage habits of food delivery apps on mobile devices.

Habit is understood as the extent to which people tend to perform behaviors automatically due to accumulated learning experiences over time. Customers who are satisfied with their previous experiences using food delivery apps on mobile devices are likely to develop a habit of using such apps and thus are more willing to continue using them in the future.

H12. Habit (HB) positively impacts customers' intention to continue using food delivery apps on mobile devices.

Customer satisfaction occurs when the actual results of using a food delivery app meet or exceed their expectations. Consequently, they will be more motivated to continue using such apps. This study proposes the following hypothesis:

H13. Satisfaction (E-SATIS) positively impacts customers' intention to continue using (CI) food delivery apps on mobile devices

3. RESEARCH METHODS

3.1. Questionnaire Design

The questions in the questionnaire are primarily based on the research of Venkatesh et al. (2012). A 5-point Likert scale is used to measure the aspects within the factors, ranging from 1 (“Strongly disagree”) to 5 (“Strongly agree”). In addition to the questions serving the research model, the survey includes two sections of questions aimed at classifying the respondents: (1) demographic information questions, and (2) questions about the habits of using food delivery apps on mobile devices.

3.2. Data Collection and Description

The authors collected a total of 194 survey questionnaires and, after preliminary processing in Excel, obtained 183 cleaned samples. The data was processed using Stata software and through the following steps: (1) Reliability test of aggregate (CR) and Cronbach's Alpha test; (2) Evaluation of relationships in the structural model through the bootstrap process.

Based on descriptive statistics of the data, more than half of the survey participants were 71.6% female and 28.4% male. The age group is concentrated in the group under 26 years old (94%), mainly the age of students who are still in school or have just graduated from school. Therefore, the educational level of the survey participants was mainly high school level (36.6%) and bachelor's degree (54.6%). Regarding monthly income, the most common income level (55.7%) is listed at less than 2 million VND, which is understandable due to the characteristics of survey participants who are mainly under 26 years old as mentioned. above; 27.3% of people have income ranging from 2 to less than 5 million. Regarding experience in using food ordering applications on mobile devices, the group with 1-2 years of experience (36.6%) is leading, and only a few people have more than 3 years of experience (12%).

4. RESEARCH RESULTS AND DISCUSSION

To test the validity and reliability of the measurement model, the values of Standardized Factor Loading, Average Variance Extracted (AVE), Composite Reliability (CR) and Cronbach's Alpha test are used.

Table 1. Measurement model reliability

Factor	Indicator	Loading	AVE	CR	Cronbach's Alpha
Hiệu suất kỳ vọng	PE1	0.856	0.707	0.906	0.864
	PE2	0.858			
	PE3	0.842			
	PE4	0.807			
Effort expectations	EE1	0.901	0.777	0.933	0.905
	EE2	0.857			
	EE3	0.886			
	EE4	0.889			
Social influence	SI1	0.899	0.717	0.883	0.800
	SI2	0.867			
	SI3	0.769			
		0.887			
Good condition	FC1	0.887	0.779	0.914	0.857
	FC2	0.937			
	FC3	0.821			
Emotional Motivation	HM1	0.715	0.721	0.885	0.805
	HM2	0.900			
	HM3	0.918			
Price	PV1	0.922	0.848	0.918	0.820
	PV2	0.920			
Usage habits	HB1	0.863	0.772	0.911	0.853
	HB2	0.883			
	HB3	0.890			
Ablity to seft – innovate	PI1	0.767	0.673	0.860	0.754
	PI2	0.795			
	PI3	0.893			
Risk awareness	PR1	0.816	0.695	0.872	0.793
	PR2	0.874			
	PR3	0.809			
Online reviews	OR1	0.852	0.689	0.917	0.887
	OR2	0.842			
	OR3	0.832			
	OR4	0.835			
	OR5	0.788			
Online positioning	OT1	0.779	0.641	0.877	0.814
	OT2	0.849			
	OT3	0.810			
	OT4	0.760			
Satisfaction	SATIS1	0.851	0.690	0.899	0.849
	SATIS2	0.878			
	SATIS3	0.849			
	SATIS4	0.737			
Intention to continue use	CI1	0.847	0.742	0.896	0.826
	CI2	0.900			
	CI3	0.837			

After conducting the tests, all indicator variables achieved the necessary reliability (Factor loadings ≥ 0.70), the scales achieved the required reliability (CR and Cronbach's alpha ≥ 0.70), and the scales achieved the necessary convergent validity (all AVE indices ≥ 0.50).

All factor loadings were greater than the required threshold of 0.70. The loadings of the measurement variables on their respective factors were higher than all the loadings of other variables measuring those factors, indicating that this measurement model achieved the necessary discriminant validity.

4.1. Hypothesis Testing

After the measurement model has been evaluated and verified, the second step is to assess the relationships within the structural model. The results of the hypothesis tests are presented in the table below.

Table 2. Testing research hypotheses

Hypothesis	Relationship	Coefficient	P-value	Conclusion
H1	PE > HB	0.136	0.124	Reject
H2	EE > HB	0.004	0.967	Reject
H3	SI > HB	0.301	0.000	Donate
H4	FC > HB	-0.101	0.292	Reject
H5	HM > HB	0.174	0.063	Donate
H6	PV > HB	0.151	0.087	Donate
H7	OR > SATIS	0.297	0.002	Donate
H8	OT > SATIS	0.273	0.001	Donate
H9	PI > SATIS	0.278	0.000	Donate
H10	PR > SA	-0.018	0.777	Reject
H11	SATIS > HB	0.162	0.033	Donate
H12	HB > CI	0.272	0.000	Donate
H13	SATIS > CI	0.626	0.000	Donate

Within the scope of this study, social influence is the most important factor determining usage habits among the factors considered. Using a mobile food delivery application allows users to interact with other customers by sharing online reviews on the platform, making it easier for customers to feel connected to the community. This leads to the formation of habits and the intention to continue using the mobile food delivery application.

According to the test results, emotional motivation significantly influences customers' usage habits. This means that the surveyed customers feel quite interested and happy when they start using a technological application system, in this case, a mobile food delivery application, and thus easily form usage habits.

Similarly to emotional motivation, price also significantly affects customers' usage habits. The research results also indicate that by influencing users' habits, price will have a positive impact on the intention to continue using the application. This is consistent with the assertion by Venkatesh et al. (2012) that price is one of the most powerful factors affecting the intention to continue using Internet-connected services on mobile devices.

At the same time, the research results also confirm the significant influence of three factors: self-innovation capability, online reviews, and online positioning. Online reviews help customers save time and effort in choosing suitable food by enabling them to gather information and evaluate alternatives to make final purchasing decisions. Online positioning, as a feature of mobile food delivery applications, makes customer access and experience simpler and more efficient, as customers can track the stages of their order without having to go directly to the restaurant and interact with

service staff. This reduces the usual time, effort, and costs associated with traditional ordering methods.

According to Venkatesh et al. (2003), performance expectancy significantly influences the initial decision to use new technology applications, such as mobile food delivery applications in this case. However, it appears that the surveyed customer group in Vietnam does not actually form usage habits based on performance expectancy. In other words, the influence of this factor quickly dissipates after the initial decision to use the mobile food delivery application.

The research results also show that customers do not place much importance on whether the mobile food delivery application is easy to understand and use, but rather focus more on price and emotional motivation. This suggests that, in order to enjoy both the material and emotional benefits provided by food delivery applications, customers may overlook the complexity involved in using the application.

Similarly, the results also lead to the finding that facilitating conditions do not have a significant impact, contrary to some previous studies such as Venkatesh et al. (2012). In the context of the widespread adoption of smartphones and mobile applications, facilitating conditions are no longer a major issue for customers when it comes to downloading and using such applications (Okumus et al., 2018).

Furthermore, the study did not find a significant influence of perceived risk. Although this finding contradicts previous results by Alalwan et al. (2018), it indicates that the surveyed customer group in Vietnam does not pay much attention to this issue.

5. CONCLUSION AND RECOMMENDATIONS

5.1. Conclusion

This study investigates the factors influencing the satisfaction and intention to continue using mobile food delivery applications among Vietnamese consumers. The results indicate that satisfaction and the intention to continue using these applications are affected by key factors including social influence, emotional motivation, price, online reviews, and online positioning. Among these, social influence is the most significant factor affecting usage habits, with a significance level of 1%. Regarding the factor of perceived risk, which the authors added to the model, the research results demonstrate that Vietnamese customers are not particularly concerned about personal information security. Finally, both usage habits and satisfaction positively influence the intention to continue using mobile food delivery applications. However, satisfaction has a stronger impact, implying that customers are more likely to use mobile food delivery applications regularly if they are truly satisfied with their initial experience using the application.

5.2. Propose

To enhance the quality of mobile food delivery applications and better serve customer needs, online food providers need to implement several necessary measures:

First, leverage the impact of social influence. Building trust with loyal customers is crucial by providing high-quality service and offering appreciation gifts such as discounts and special offers. This approach helps customers perceive the quality of service provided and, in turn, encourages them to recommend the service to potential new customers.

Second, reduce perceived costs for customers by partnering with professional payment and delivery service providers. This strategy alleviates cost pressures and offers more cost-saving options for customers, such as promotional policies and various payment and delivery options with corresponding fees and discounts. For example, options could include prepayment or cash on delivery, express delivery or economy delivery (with longer wait times), and different packaging methods.

Third, develop strategies based on customers' emotional motivations. Advertising campaigns should focus on how appealing and enjoyable it is to use mobile food delivery applications to stimulate consumer curiosity and encourage them to try ordering food through the application.

Fourth, encourage users to rate and provide reviews. It's essential to monitor all online reviews provided by customers to ensure that they are relevant to the food products of the provider and reliable for other users to reference as a useful source of information.

Fifth, improve the online positioning function of the mobile food delivery application. Consumers will find it engaging to track their orders through visually appealing and vivid location images designed simply on the application. Additionally, provide comprehensive information related to customer orders (estimated delivery time, distance between the restaurant and the user's location, name and information of the delivery driver, etc.). Ensure that the information provided is updated promptly and reliably; otherwise, it may erode customer trust in the quality of service provided by both the restaurant and the application.

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