FACTORS INFLUENCING THE STUDENTS' INTENTION OF USING ONLINE FOOD ORDERING APPS: A CASE STUDY IN HO CHI MINH CITY

Dang Thi My Dung[(1)], Vo Quoc Chi[(2)], Nguyen Thi Hong My[(2)], Le Trang Bao Ngoc[(2)]

(1) University of Bolton, United Kingdom & Foreign Trade University, Ho Chi Minh City
(2) Foreign Trade University, Ho Chi Minh City
Corresponding author: dangthimydung.cs2@ftu.edu.vn

DOI: 10.37550/tdmu.EJS/2024.02.541

Article Info

Volume: 6
Issue: 02
June 2024
Received: Jan. 31st, 2024
Accepted: April 8th, 2024
Page No: 159-167

Abstract

Nowadays, many utility services have been provided to make human life more convenient and easier. Among them, online food ordering applications with high coverage and diverse forms become prominent. This research aims to examine the factors influencing the intention of using online food ordering applications among students in Ho Chi Minh City (HCMC). Using a multivariate linear regression model and the least squares method (OLS), the research team analyzed primary data on the basis of 120 valid survey sheets collected from students studying in HCMC. The research results indicate that there are seven key determinants influencing the intention of using online food ordering applications, including: (1) Ease of use (EOU), (2) Convenience (CV), (3) Aesthetic appeal (AA), (4) Price expectations (PE), (5) Social influence (SI), (6) Perceived risk (PR), and (7) Habits (HB). Among them, the three factors with the greatest impact on intention are ease of use, aesthetic appeal, and social influence. Based on the test results, the study proposes a management implication to help food delivery service providers enhance service quality, suggest development directions, and approach suitable strategies for potential customer groups.

Keywords: attitudes, food ordering apps, management implication, service providers, students' intention

1. Introduction

In today's society, along with the advancement of science and technology, online applications are becoming increasingly popular and an integral part of our daily lives. As of the end of 2020, the number of applications on the Android and iOS operating systems was 3.14 million and 2.09 million, respectively, making them the two largest app stores in the world. According to DataReportal's statistics in 2021, the number of smartphone users reached 5.22 billion by the end of 2020, accounting for 66.97% of the world's population, and 2020 alone added 93 million users, an increase of 1.8% compared to 2019. With this rapid increase, various online businesses have emerged, meeting the essential needs of people (DataReportal, 2021).

As one of the basic and essential needs of humans, eating has become a challenging task due to the majority of people dedicating their time to work and daily activities in the modern era. Recognizing this societal trend, online food delivery applications have emerged, providing convenience to restaurant owners, delivery personnel, and consumers. Specifically, consumers can comfortably choose their favorite food through websites and online applications, saving time on transportation and cooking. They can also compare menus, prices, and promotions between different restaurants and

read reviews and experiences of other users before making a purchasing decision. According to a survey on food delivery services by Q&Me in April 2020, out of 840 participants, 75% used food delivery services, indicating the widespread popularity of this form. Currently, the five popular brands in the online food delivery market in Vietnam are Grab Food, Now, Go Food, Baemin, and Loship, with Grab Food leading with 79% of users, followed by Now and Go Food with 56% and 41%, respectively. Baemin and Loship, being relatively new to the market, have lower consumer usage rates, but they are gradually gaining an influence on Vietnamese customers, especially students in Ho Chi Minh City.

Despite the growing popularity of online food delivery services, there has been no in-depth study analyzing the factors influencing consumers' intention of using these applications. Most previous studies focused on mobile applications in general and did not delve deeply into the field of online food delivery. Additionally, the scope of previous research was broad, without specific analysis of different target groups to have a good understanding of the behaviors and attitudes of various user groups. Due to these reasons, the research topic "Factors influencing the intention to use online food ordering applications among students in Ho Chi Minh City" was chosen to clarify the results of previous reports and address some limitations identified in previous studies to make some recommendations for service providers as well.

2. Literature review

2.1. Food delivery apps

In the current trend, along with the rapid growth of information technology, consumers are increasingly shifting towards using electronic devices to fulfil their shopping, entertainment, and socializing needs. Mobile commerce has consequently experienced remarkable development within a short period. Mobile devices are no longer merely tools for communication, listening to music, or watching movies; they have evolved into essential aids for consumers in shopping, ordering food online, and utilizing utility applications on their phones. One notable example is food delivery applications.

According to Kimes et al. (2011), "Online food ordering is the process of placing an order through the website (mobile app) of a restaurant or through the website (app) of various restaurants. A customer can choose to have the food delivered or pick it up. Payment is also managed through the app (website) or in cash at the restaurant when picking up."

Additionally, He et al. (2018) state that "The process of ordering food online includes customers selecting the restaurant they desire, reviewing the menu, choosing dishes, and finally opting for pickup or delivery. The website (app) informs the customer about the food quality, food preparation time, the time the food is ready for pickup, or the time needed for delivery."

In this study, the authors investigate the intention to use a food delivery application based on smartphone platforms. Specifically, online food ordering is the process of placing an order through a mobile application for food delivery.

2.2. Usage Intention

According to Ajzen (1991), "Intention is a motivational factor; it propels an individual's willingness to perform a behaviour." The author further asserts that "Intention encompasses motivational factors influencing each individual's readiness or effort to engage in a behaviour." In the Theory of Reasoned Action (TRA), developed by Ajzen and Fishbein in the late 1960s and extensively refined in the 1970s, intention is highlighted as the most crucial factor in predicting consumer behaviour (Actual Behaviour). Intention is influenced by two factors: attitude and subjective norm.

Additionally, the Technology Acceptance Model (TAM), formulated by Davis (1985) based on the TRA, indicates that intention is a direct precursor to technology usage behavior. The relationship

between intention and technology usage behavior has been examined by Joongho Ahn et al. (2001), Hasslinger et al. (2007), and in the research conducted by Hoang Quoc Cuong (2010). Therefore, in this study, the authors will conduct analyses and focus on examining the factors influencing the intention to use a food delivery application among consumers in Ho Chi Minh City.

2.3. Ease of use

According to Davis (1985) , "Perceived ease of use is the degree to which a person believes that using a specific application will require little effort." Studies by Joongho Ahn et al. (2001) , Matthew Lee & Christy Cheung (2005), Nguyen Duy Thanh et al. (2015), Le Ngoc Duc (2008), Hoang (2010), Lee et al. (2017), and Elango et al. (2018) also indicate that *perceived ease of use* has a positive impact on usage intention. In this study, perceived ease of use will manifest in the users' perception that using the food delivery application is straightforward and easy to become proficient in, meeting their needs effortlessly when required.

2.4. Convenience

According to Hasslinger et al. (2007), consumers perceive that purchasing items online or using online food delivery services helps them save time and effort while providing the flexibility to use the service whenever needed. In this study, the factor “Convenience" is viewed by the authors as being reflected in the positive support provided by the food delivery application for consumers in placing orders. This assistance allows them to order food at a lower cost and save time.

2.5. Aesthetic Appeal

Aesthetic appeal refers to the level of satisfaction and enjoyment experienced by users while interacting with a web application or interface (Chang et al., 2014). It encompasses various elements and features of applications, creating a positive impression on the consumer's perception (Kumar et al., 2018). Previous studies have indicated that aesthetics can elicit emotions in consumers (Kumar et al., 2018; Patel and Zaveri, 2020). For instance, the aesthetics of mobile apps can evoke positive emotions, thereby enhancing consumer loyalty (Kumar et al., 2018). However, scholars (Cano et al., 2017) have proposed that subpar aesthetics, such as slow loading times of online interfaces, can trigger negative emotions in consumers, discouraging them from revisiting. For example, when YouTube videos experience buffering, users commonly react by cancelling and closing the video due to frustration or irritation.

2.6. Price expectations

Hasslinger et al. (2007) discussed customers' belief that online shopping helps save time, money, and enables price comparisons. Studies by Nguyen Duy Thanh et al. (2015) and Hoang Quoc Cuong (2010) also acknowledge that "Price Expectations" have a positive impact on usage intention. In this study, customers' price expectations regarding the food delivery application are manifested in their belief that using the app will help them save money on products and transactions compared to direct purchases, especially through promotional programs.

2.7. Online reviews

According to Saumya et al. (2020), consumer reviews and online evaluations are often considered highly credible and reliable. Therefore, Saumya, Singh, and Dwivedi (2015), Filieri (2018) argue that customers frequently review sources of information they wish to explore further. Additionally,. Neil et al. (2008) acknowledge that as long as customers perceive such information sources as comprehensive, reliable, up-to-date, and relevant, they are more likely to have a positive attitude and perception towards that application. Furthermore, Mathwick and Mosteller have pointed out that online reviews are an indispensable part of customer interaction within the online community.

2.8. Social influence

User social influence represents a crucial factor influencing the behaviour and intention to adopt new technology. It entails users being inclined to explore novel technologies based on the influence of

others, including friends, colleagues, and family members. Social influence exerts a positive impact on users' intentions to adopt new technologies (Sair, S.A and colleagues (2018), Sathye S (2018), Skoumpopoulou (2018). Therefore, this determinant can significantly influence the user's intention to continue using the Food Delivery Application (FDA). As stated by Alaimo, LS and colleagues (2020), the proliferation of mobile social networks has heightened social influence in the adoption of new mobile technologies, including FDAs. The increased social influence is, however, contingent upon the positive effects on user satisfaction.

2.9. Perceived Risk

In the E-CAM model of e-commerce acceptance (Joongho Ahn et al., 2001) and the Theory of Perceived Risk (TPR) (Bauer, 1960), it is asserted that perceived risk related to products or services reflects consumers' concerns about personal information when using online services. Risks associated with usage may include personal information disclosure, account loss, receiving incorrect products, or impacts on health and food safety hygiene. In this studyonline application users who perceive higher risks are less likely to use or have no intention of using the service.

2.10. Habit

Habit is the final construct added by Venkatesh et al. (2012) to the UTAUT2 model to provide an accurate picture of customer interaction with new systems. According to Limayem et al. (2007), habits can be formed as customers' spontaneous behavioural tendencies based on their accumulated experiential learning. The role of habit has been demonstrated in the field of mobile commerce and applications (Amoroso & Lim (2007), Rana et al. (2017), Sun & Chi (2017)). Amoroso and Lim (2017) observed that customers satisfied with their previous experiences with mobile applications are more likely to form habits with such applications, making them more willing to continue using these applications in the future. Morosan and DeFranco (2015) also found that this habit significantly influences customers' intention of using mobile payments in the hotel industry.

Consistent with Venkatesh et al. (2012) proposed, it can be expected that customers with habitual behavior towards Mobile Food Ordering Applications (MFOAs) are more likely to continue using these applications in the future.

2.11. Trust

Hasslinger et al.'s study (2007) suggests that trust positively influences customers' usage intention. Simultaneously, numerous studies have also acknowledged that trust plays a significant role in impacting consumer usage intentions. According to the author's assertion, customer trust is manifested through their desire for the received product to align with the descriptions provided.

2. Research Methodology

2.1. Research Model

To quantify the determinants influencing the intention of using online food ordering applications among students in Ho Chi Minh City, the research team relied on relevant previous studies to select the dependent and independent variables for inclusion in the quantitative model. The research model comprises nine independent variables: ease of use, convenience, aesthetic appeal, price expectations, online reviews, social influence, risk perception, habits, and trust, impacting a dependent variable, namely, usage intention.

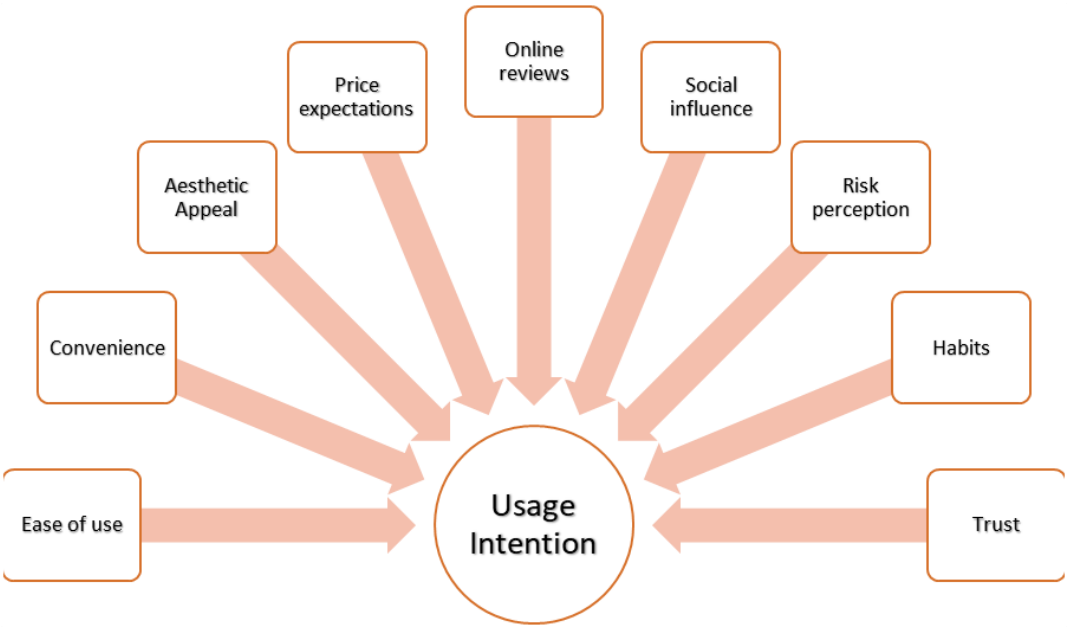

Figure 1. Suggested research model

2.2. Hypothesis

(H1): The easier the application is to use, the higher the consumer usage intention.

(H2): Increased convenience in the purchasing process leads to a higher consumer usage intention.

(H3): Higher aesthetic appeal results in a higher consumer usage intention.

(H4): Higher price expectations lead to a higher consumer usage intention.

(H5): Positive online reviews contribute to a higher consumer usage intention.

(H6): Increased social influence results in a higher consumer usage intention.

(H7): Increased perceived risk leads to a decrease in consumer usage intention.

(H8): Greater cultural habits result in a higher consumer usage intention.

(H9): Trust in service quality leads to a higher consumer usage intention.

2.3. Data collection

To conduct the examination, the research team collected data using a convenience sampling method: distributing survey questionnaires to students from various universities in Ho Chi Minh City. The summarized results of the sample characteristics are presented in the following table:

TABLE 1. Characteristics of sample

CATEGORY	**QUANTITY**	**PERCENTAGE (%)**
GENDER		
Male	69	57.5
Female	51	42.5
YEAR OF STUDY		
Freshman	102	85
Sophomore	14	11.67
Other	4	3.33
INCOME/SCHOLARSHIP		
Below 2 million VND	35	29.17
2 - 5 million VND	65	54.17
5 - 10 million VND	8	15

MAJOR		
Economics	64	53.33
Engineering	32	26.67
Other	24	20
SHOPPING HABITS		
Traditional	43	35.83%
Online	77	64.17%
USAGE STATUS		
Already Used	106	88.33%
Know but Haven't Used	14	11.67%
USED APPLICATIONS		
GrabFood	73	23.78%
BAEMIN	75	24.43%
ShopeeFood	66	21.5%
Other	93	30.29%

3. Results and discussions

3.1. Results

The research results have identified 7 factors influencing the usage intention, including: Ease of Use (EU), Convenience (C), Aesthetic Appeal (AA), Price Expectations (PE), Social Influence (SI), Perceived Risk (PR), and Habit (H). After conducting tests and addressing common issues in regression models such as multicollinearity, variance inflation, and autocorrelation, we obtained the final regression model as follows

$$UI = -0{,}7919 + 0{,}3282.EU + 0{,}1567.\ C + 0{,}3278.\ AA + 0{,}1772.\ PE + 0{,}2032.$$
$$SI - 0{,}0858.\ R + 0{,}1157.\ H$$

From the results of the regression equation, the group observed the following:

If the perception of ease of use (EU) increases by 1 unit, the usage intention (UI) among students in Ho Chi Minh City increases by 0.3282 units.

If the perception of convenience (C) increases by 1 unit, the usage intention (UI) among students in Ho Chi Minh City increases by 0.1567 units.

If the perception of aesthetic appeal (AA) increases by 1 unit, the usage intention (UI) among students in Ho Chi Minh City increases by 0.3278 units.

If the price expectation (PE) increases by 1 unit, the usage intention (UI) among students in Ho Chi Minh City increases by 0.1772 units.

If social influence (SI) increases by 1 unit, the usage intention (UI) among students in Ho Chi Minh City increases by 0.2032 units.

If the perception of risk (PR) increases by 1 unit, the usage intention (UI) among students in Ho Chi Minh City decreases by 0.0858 units.

If the habit perception (H) increases by 1 unit, the usage intention (UI) among students in Ho Chi Minh City increases by 0.1157 units.

3.2. Discussions

The research results indicate that the factor of ease of use (EU) has the highest impact coefficient β = 0.3282 (statistical significance level Pvalue = 0.000). Therefore, this factor has the most positive influence on the usage intention (UI) among students in Ho Chi Minh City. This result aligns with the study by Chandra, Wiria, Wirapraja, and Alenxander (2020), suggesting that students tend to highly

evaluate applications with simple information systems, easy operation, and clear features. In summary, the simpler and more understandable the operation, the higher the intention to use the application.

The second strongly influencing factor is aesthetic appeal (AA) with $\beta = 0.3278$ (Pvalue = 0.000). This is a new factor compared to previous studies. Through the research, it is found that this factor has a significant impact on the intention to use the application (UI) because young people tend to appreciate beauty and are attracted to visually appealing images. This corresponds to the observation that the more aesthetically pleasing the presentation of food, the stronger the stimulation of students' intention to use the application.

Next, social influence (SI) with a coefficient of $\beta = 0.2032$ (Pvalue = 0.002) also has a positive impact on the intention to use (UI) among students in Ho Chi Minh City. This is consistent with the development of the Internet, which provides a vast network of data and information. Therefore, students often trust and make purchasing decisions based on recommendations from friends and family. Moreover, influencers in the community also have a significant impact on consumer behavior in general and, specifically, on students.

Additionally, the factors of price expectation (β PE = 0.1772), convenience (β C = 0.1567), and habit (β H = 0.1157) influence the intention to use. Concerning price expectations (PE), the result is easily understandable because, although the price is an important factor that consumers often consider before making a purchase decision, on online platforms, prices are often higher than actual due to delivery fees, service charges, etc. Therefore, the factor of price expectation (PE) has a lower impact compared to the previous factors. The other two factors, convenience (C) and habit (H), although influencing the intention to use the application, have a lower impact because students pay less attention to issues such as time, reuse, etc. Once young people have an exciting perception about something, they make decisions quickly and often overlook other factors.

Finally, risk perception (PR) with $\beta = -0.0858$ is the only factor negatively affecting the intention to use (UI) among students in Ho Chi Minh City. In reality, online food delivery services through mobile applications easily expose personal information such as names, phone numbers, home addresses, etc., of customers. Students, being a generation equipped with a certain knowledge base, are more aware of the level of risk, leading to a decrease in their intention to use such applications.

4. Limitations and future research

4.1. Limitations of the Study and Suggestions for Future Research

4.1.1. Limitations of the study

The research model successfully achieved its outlined objectives. However, based on the collected statistical data and the work process, several limitations of the study can be synthesized as follows:

• ***Sample Limitation:*** The data sample was drawn from a specific group—first-year university students, resulting in a limited representativeness. The satisfaction with pricing might not be objectively assessed across diverse demographic groups, depending on varying economic conditions. Other factors influencing consumer needs, beyond those outlined by the group, remain unexplored.

• ***Time Constraints:*** The study faced time limitations, and constrained resources affected the sample size, balancing the need for both progress and research quality. The primary data collection method employed a small sample size.

• ***Independent Variables***: The research model explained less than 70% of the variance in the dependent variable. It indicates that there are still many significant variables such as mediator variables, moderator variables, etc., not incorporated into the model.

4.1.2. Suggestions for Future Research

Considering the acknowledged limitations, the following suggestions are proposed for future research:

• ***Diversify Sample Groups***: Future studies could broaden the scope of the research by including a more diverse range of subjects, ensuring a more representative sample.

• ***Combine Sampling Methods***: Employ diverse sampling methods to create a more objective and high-quality data source.

• ***Explore Additional Variables:*** Future research should explore and incorporate other meaningful variables into the model. This is crucial for enhancing the feasibility and significance of the study.

These suggestions aim to guide subsequent research efforts in overcoming the identified limitations and advancing the understanding of the factors influencing consumer behavior.

4.2. Recommendations

4.2.1. For service Providers

Attention should be focused on factors influencing consumers' online shopping intentions of adopting an appropriate approach and developing software that leverages positive factors while minimizing negative ones. Ease of use, convenience, and aesthetic appeal positively impact the intention of shopping online. Therefore, manufacturers need to design applications that are simple, easy to understand, intuitive, yet visually appealing to cater to various age groups and different levels of expertise. Furthermore, the application should facilitate quick purchases to minimize the likelihood of changing shopping decisions. Suppliers also need to address the customers 'challenges in installing the application on their phones due to unsupported operating systems. They should focus more on updating features when the application undergoes changes and establish hotlines to support customers in case of any issues.

Collaboration with sellers to create multiple discount periods, vouchers, free shipping, and maintaining competitive product prices will attract more potential consumers. Intensifying communication during holidays and special monthly events helps to reach a broader audience, providing positive experiences that retain customers. Selling high-quality products at reasonable prices and promptly addressing customer preferences will result in positive customers' reviews and satisfaction.

4.2.2. For Consumers

Currently, e-commerce platforms are becoming increasingly popular, featuring a variety of stores with diverse product offerings. To minimize risks and enhance the quality of online shopping, consumers should make thorough consideration before making a purchase.

5. Conclusion

In conclusion, the current study significantly contributes to the literature of online food ordering apps. The determinants used in the research are based on the theory of Unified Theory of Acceptance and Use of Technology (UTAUT). The research model has also been expanded with other aspects, perspectives of online food ordering apps/ services. The research findings emphasized that there are seven key determinants influencing the intention of using online food ordering applications, including: (1) Ease of use (EOU), (2) Convenience (CV), (3) Aesthetic appeal (AA), (4) Price expectations (PE), (5) Social influence (SI), (6) Perceived risk (PR), and (7) Habits (HB). Among them, the three key factors with the greatest impact on customers' intention of using food ordering apps are ease of use, aesthetic appeal, and social influence. Furthermore, the study offered some management implications for food delivery service providers in enhancing service quality to attract more potential customer groups.

References

Alalwan, A.A. (2019). Mobile food ordering apps: An empirical study of the factors affecting customer e-satisfaction and continued intention to reuse. *International Journal of Information Management*. Retrieved from: https://doi.org/10.1016/j.ijinfomgt.2019.04.008.

Amin, A., Akhtar, A., Arefin, S., Islam, R., Jahan, I., & Sultana, N. (2020). Evaluating customers' attitudes, e-satisfaction, and continuance intention towards mobile food ordering apps (MFOAs): Evidence from Bangladesh. *European Journal of Management and Business Economics*, pp. 211-229.

Anh, T. (2021). Demand for food delivery services of Vietnamese people during the Covid-19 pandemic. Retrieved on November 14, 2023, from: https://www.semtek.com.vn/bao-cao-nhu-cau-su-dung-dich-vu-giao-nhan-do-ancua- nguoi-viet-mua-dich-covid-19/.

Bilgihan, A., & Okumus, B. (2014). Proposing a model to test smartphone users' intention to use smart applications when ordering food in restaurants. Journal of Hospitality and Tourism Technology, pp. 31-49). Retrieved from: https://doi.org/10.1108/JHTT-01-2013-0003.

Ceci, L. (2022). Number of apps available in leading app stores as of 1st quarter 2021. Retrieved on November 14, 2023, from: https://www.statista.com/statistics/276623/number-of-apps-available-in-leadingapp- stores/.

Chandra, W., & Wirapraja, A. (2020). The Effect of Application Usability, Service Quality, and E-Satisfaction on Influencing Purchase Intention of GO-FOOD Customers. *Indonesian Journal of Information Systems*, pp. 38-49. Retrieved from: 10.24002/ijis.v3i1.3563.

Dat, N.T., Siem, T.T., Thuy, L.N., & Tho, T.A. (2021). Satisfaction and intention to continue using mobile food ordering apps in Ho Chi Minh City. *Journal of Science and Technology, University of Da Nang*, pp. 25-32. Retrieved from: https://jst-ud.vn/jstud/article/view/7558.

Hai, L.N., & Mai, P.T.T. (2021). Research on factors influencing the intention to use food delivery apps by consumers in Da Nang City. *Journal of Science and Technology*.

Hasslinger, A., Hodzic, S., & Opazo, C. (2007). *Consumer Behaviour in Online Shopping*. Department of Business Studies.

Isocert (2020). *What is food? All the information related to food*. Retrieved on Nov 15, 2023, from: https://isocert.org.vn/thuc-pham-la-gi-tat-tan-tat-cac-thong- tin-lien-quan-den-thuc-pham.

Khanh, P.N.K., Long, N.T., & Trang, N.T.K. (2021). Factors influencing the intention to use BAEMIN app for food ordering in Ho Chi Minh City. *Journal of Science and Technology*.

Kemp, S. (2021). *Digital 2021: Global Overview Report*. Retrieved on November 14, 2023, from: https://datareportal.com/reports/digital-2021- globaloverview-report.

Luận văn 99 (2020). Online shopping - What is it? The theory of online shopping behavior. Retrieved on November 14, 2023, from: https://luanvan99.com/mua-samtruc-tuyen-la-gi-bid176.html.

Long, L.Q., & Thao, H.T.P. (2020). *Factors influencing trust and intention to continue using mobile food delivery services among consumers*. Retrieved from: 10.46223/HCMCOUJS.econ.vi.16.2.931.2021.

Mustika, N. & Saifudin (2021). Analysis of factors affecting student behavior in using Go-Food services (case study of Febi Iain Salatiga students). *Journal of Islamic Entrepreneurship and Management*, pp. 50-59.

Nhung, M.T.H., & Tuân, N.H. (2019). Factors influencing the online fast food purchasing behavior of consumers in Da Nang City. *Finance Journal*.

SurveyMonkey (2021). What is a Likert scale?. Retrieved on November 14, 2023, from: https://www.surveymonkey.com/mp/likert-scale/.

Thương, N.T.H. (2018). Factors influencing the decision to choose Grabfood among customers in Ho Chi Minh City.

VinID Blog (2020). *What is fast food delivery service? Which service delivers food the fastest?*. Retrieved on November 14, 2023, from: https://vinid.net/blog/nhu-the-nao-la-dich-vu-ship-do-an-nhanh-dich-vu-nao-shipdo- an-nhanh-nhat.