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ẢNH HƯỞNG CỦA ĐẠI DỊCH COVID-19 ĐẾN VIỆC SỬ DỤNG VÍ ĐIỆN TỬ TẠI VIỆT NAM

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Tóm tắt

Đại dịch Covid-19 đã tạo ra sự ảnh hưởng rất lớn đối với nền kinh tế của Việt Nam trong giai đoạn từ 2020 tới nay, đặc biệt là có sự tác động rất lớn đối với việc sử dụng các hình thức thanh toán không dùng tiền mặt. Nghiên cứu này của chúng tôi bao gồm sự phân tích về những ảnh hưởng của đại dịch Covid-19 đến việc sử dụng ví điện tử tại Việt Nam và dữ liệu khảo sát thu thập được từ Internet của gần 300 công dân trên toàn lãnh thổ Việt Nam trong tháng ba 2022. Kết quả của bài nghiên cứu này sẽ thống kê sự khác biệt trong hành vi người tiêu dùng trước và sau khi sử dụng ví điện tử và đề xuất các giải pháp trong việc phát triển chính sách của hệ thống thanh toán điện tử trên sàn thương mại Việt Nam trong giai đoạn Covid-19 và hậu Covid-19.

Từ khoá: ví điện tử, hành vi người tiêu dùng Việt Nam, đại dịch COVID-19.

THE INFLUENCE OF COVID 19 PANDEMIC ON VIETNAMESE CUSTOMERS' BEHAVIORS TOWARD USING E-WALLET

Abstract

The Covid-19 pandemic has created a huge impact on Vietnam's economy during the period from 2020 until now, especially on the use of wireless payment methods. Our study includes the analysis of the influence of 7 factors affecting the intentions to use E-wallets and research data collection via the Internet from 300 Vietnamese citizens from different regions in March 2022. This study research will point out the differences in Vietnamese consumer behavior before and after using e-wallets and propose solutions for developing the policy of online payment systems in Vietnam's e-commercial marketplace. during the Covid-19 and post-Covid-19 period.

Keywords: E-wallets, Vietnamese consumer behavior, COVID-19 pandemic.

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1. Introduction

In the context of the complicated situation of the COVID-19 epidemic, the fear of being infected with COVID-19 from cash and coins has prompted contactless payment services. The European Central Bank recently collaborated with the Department of Biomedical and Molecular Microbiology at Bochum State University, Germany to conduct a study on the possibility of virus transmission through cash and coins. Researchers have developed a special method to determine how many infectious virus particles can be transmitted from cash and coins to the skin of hands under real conditions. The results show that the risk of contracting the SARS-CoV-2 virus when people conduct direct payment by cash possibly happens (The journal iScience, 2020).

Vietnam has witnessed a boom in the E-wallet market. Both foreign and domestic suppliers are rushing to keep up with the hottest trend. Fin-tech companies have launched a lot of promising services like MoMo, VNPayQR, NextPay, Payoo, and Pay365. Domestic banks introduced products like Bank Plus, cooperation between telecom giant Viettel and MB Bank, Timo by VPBank, and MEED by Maritime Bank. Telecom enterprises Vinaphone, Viettel, VTC, and FPT have launched VNPT Pay, ViettelPay, VTCPay, and Pay FPT. Even Zalo, which provides messaging services, has made a move, launching ZaloPay. As a latecomer to the market, Zalo leveraged the 100 million users on its social network to convince retail partners to accept its ZaloPay e-wallet. In 2025, the e-wallet market is believed to be fiercely competitive, which may push e-wallet providers to merge into a few leading super apps in the region and local to dominate the market. Not only that but many super apps and service providers from other economic sectors (such as e-commerce, retail and financial services) will also cooperate with each other (Hai, 2022).

Currently, many types of e-wallets are promoting their ecosystem expansion, allowing users to use the accompanying utilities and promotions. In addition to providing a full range of basic utilities such as mobile phone payments, electricity bills, water bills, Internet payments, loan payments, insurance fees, apartment service fees, public services, tuition fees, tickets fees (trains, planes) ... E-wallets are building their own games, incentive programs or linking with many e-commerce platforms like Lazada, Tiki, Shopee, Sendo, etc... to increase customer experience and convenience. E-wallets that have many utilities and are more suitable for their customers will have an advantage in the race to attract more customers.

In addition to online payment services of banks such as Digital Internet Banking, SMS Banking, etc with the development and widespread of Industry 4.0, online payment methods have gradually tended to diversify and beyond the limits of the commercial banking system, especially the development of e-wallets. Previous research has already shown the Vietnamese consumer behavior in using e-wallets (Phan, 2020; Nguyen, 2020). However, studies that mainly examine how Covid-19 affected e-wallet users to the behavior of Vietnamese consumers during COVID-19 pandemic remain scarce. Due to this lack of study on this topic, our research contributes to the literature by reviewing and evaluating how COVID-19 pandemic impacted on Vietnamese consumers' behavior to use e-wallets. We aim to put forward some recommendations for e-wallet users and the development of online payment systems after testing the influence of some factors on the intentions to use e-wallets of Vietnamese consumers in the context of COVID-19.

2. Literature review and hypothesis development

2.1 E-wallet

The electronic wallet (E-wallet) is an application that stores a user's credit card information and allows them to make e-commerce transactions. Payment by e-wallet is currently one of the most popular transaction methods since electronic transactions utilizing a digital wallet offer convenience, flexibility, and security (Uddin *et al.*, 2014).

The E-wallet combines all of today's wallet functionalities onto a single smart card, eliminating the need for multiple cards. The E-Wallet will also have a number of security measures not found in traditional wallets. Every credit card transaction requires identification, and the card is equipped with a disabling device in case it is hacked. Electronic wallets are commercially available for mobile, tablet, and desktop PCs, and are extremely beneficial for frequent internet consumers (Upadhayaya, 2012). They provide an online shopping tool that is safe, convenient, and portable. Credit cards, passwords, PINs, and other personal and financial information are all stored. An e-wallet can be considered a digital wallet that stores all of your important personal information (credit cards, calling cards, passwords, PINs, account numbers and more). A username, a password, and a URL are examples of connected bits of information. Cards can also be customized with icons, colors, and, on some platforms, images. Cards are grouped into categories to help keep them organized. Wallet files can have many different categories and can be put in any kind of card in any category. In addition, categories can be nested as well, allowing placing categories within categories.

2.2 Consumer Behavior and Intention to use

Customer behaviors

Echchakoui (2015) has stated that the consumer behavior is the user's action characteristics that are revealed in the buying process or use of goods and services. Besides, Moon (2015) has argued that consumer behavior is all the direct and indirect actions that consumers take to obtain goods or services at a particular place and at a specific time. Consumer decision-making could also be defined as the "behavior patterns of consumers, that precede, determine and follow on the decision process for the acquisition of need satisfying products, ideas or services" (Du Plessis *et al.*, 1991).

Intention to use

According to Ajzen (1991), intent is motivating and demonstrates an individual's willingness to perform a particular behavior. The intention to use is defined as the degree to which a person has formed a conscious mind to perform some specific future behavior (Venkatesh, 2008). To be more specific, users will be more likely to utilize technology if they believe it will be valuable to them and is simple to use. The intention to use mobile apps is the ability of users to use mobile apps regularly and continuously in the future (Webster, J., Trevino, L. K., & Ryan, L., 1993; Venkatesh, V., & Davis, F. 2000). Therefore, the intention to use e-wallet was used as the outcome variable in this study as it has been found to be a reliable predictor of actual e-wallet usage. In addition, intention to use is one of the important predictors of consumer behavior to use (Giandi *et al.*, 2020).

2.2. Some factors affecting the Intention to use E-wallet

2.2.1 Perceived Covid-19 risk

Perceived risk is defined as the perceived uncertainty in a purchase situation (Im *et al.*, 2008). In this study, perceived risk is defined as the situation where the customers are uncertain of novel coronavirus droplets on the physical money or cash. According to Oh *et al.* (2015) and Maser and Weiermair (1998), the risk dimension associated with this study is more connected to cognitive and disease risk, where customers are worried about getting infected by SARS-Cov2 through exchange of physical money. People who are infected are contagious, and the virus can transmit from them to others.. As a result, customers may look for an alternative method which requires less in-person interaction and that is cashless payment.

2.2.2 Perceived usefulness

Perceived usefulness is defined here as "the degree to which a person believes that using a particular system would enhance his or her job performance" (Davis *et al.*, 1989). This is based on the meaning of the term useful, which states that it is "capable of being employed advantageously". Technically, the e-wallet platform is a major success of payment during social distancing or self-quarantine periods among various types of payments. Furthermore, e-wallets can be used as an alternative payment system to assist the government in lowering the chance of COVID-19 spreading. Several previous research have demonstrated that perceived utility is a substantial predictor of e-money usage intention (Aji & Dharmmesta, 2019).

2.2.3 Perceived ease of use

Perceived ease of use refers to "the degree to which a person believes that using a particular system would be free of effort" (Davis *et al.*, 1989). Effort is a finite resource that a person may allocate to the various activities for which he or she is responsible (Radner and Rothschild, 1975). Nguyen *et al.* (2020) found that simplicity of use is the most influencing element in customers' desire to use an e-wallet in their study of the Momo e-wallet adoption scenario in Vietnam. Making the application simple to use is critical for e-wallet service providers who aim to attract consumers of various ages, levels of education, and income. We claim that, given all other factors being equal, a user-friendly application is more likely to be accepted.

2.2.4 Payment security

Payment security involves the steps businesses take to make sure that their customers' data is protected and to avoid unauthorized transactions and data breaches (Jim, 2021). Non-cash payment is different from electronic payment on account of the differences in the technologies, since they created a variety of new risks on security, such as the risks that mobile devices or personal information might be stolen, lost and damaged (Mallat *et al.*,2006) mentioned that Payment Security strongly affected consumer intention to use mobile payment. Consumers did not purchase products online since they did not have any confidence in online business (Gefen *et al.*,2003) mention that the beliefs regarding the safety of conducting business on the Internet affects consumers not to purchase online. The study conducted by Wai Han Wong (2019) mentioned that payment security has highly affected consumer intention to use e-wallets.

2.2.5 Social Feedback

As a determinant of behavioral intention as a subjective norm according to the theory of TRA (Ajzen, 1991), or TAM (Davis, 1989). When shopping online, the impact of opinions plays an important role due to the nature of online shopping.The definition of social feedback is also mentioned in a number of other studies such as technology use and acceptance patterns (Venkatesh *et al.*, 2012) or forecasting in e-commerce (Pavlou and Fygenson, 2006). Social feedback not only affects the purchase intention of the buyer, but also has a great influence on the buyer's attitude towards online shopping. The opinions and feedback of relatives (such as friends, family, colleagues, celebrities, ...) can directly and indirectly affect consumers' trust in online suppliers through individuals or the mass media.

3. Research method:

3.1 Measurement scales

In this study, 3 types of scale of measurement are adopted, including: nominal scale, internal scale and ordinal scale. By using various scales, the data could be collected and analyzed more correctly.

Section one contains demographic profiles measured using nominal scales and ordinal scales of measurement. This section would collect demographic variables such as age, marital status, occupations, monthly income level, and the ewallet's usage of the respondents.

To ensure that only accurate data is studied, questionnaires were designed in such a way that respondents were asked a few comparable items but in a different order. In this method, it was determined that respondents had carefully completed the survey.

3.2 Questionnaires

To evaluate the impact of E-wallet usage on Vietnamese customer behavior during Covid-19, we conducted an online questionnaire to survey people's opinion of customer behavior. The questionnaire design in the survey was studied and considered to be appropriate to every group of people. The online questionnaire on Google Form was sent to people over 18 from all cities in Vietnam. A total of 224 respondents' data was successfully collected between March 18th to March 31st.

3.3 Sampling and data collection

The survey was distributed to Vietnamese citizens in all groups. Electronic platforms such as Facebook, Instagram as well as offline channels were used to collect data from the participants. According to the EFA exploratory analysis, the minimum sample size of the research must be at least 5 times the number of indicators observed on scales. The number 125 in the sample size is expected since the survey meets 25 observed variables. A total of 298 completed questionnaires were collected from the study population but there are only 224 trusted answers. The demographic data showed that the majority of the respondents were students (from 18 to 25 years old). Due to the time and geographical limitations, the number of answers is not equal in terms of age. The level of income varied among the respondents.

3.4 Data analysis

The test model used quantitative variables including constituent observed variables, in which each observed variable is measured by the 5-point Likert scale. Therefore, the study selected the statistical software IBM SPSS to analyze the data of the respondents. The process follows 3 important steps: reliability testing, factor analysis, and correlation analysis. The purpose starts by analyzing research models, indicators, relationships and causal-predictive models. After all, the study would predict the intention of customers using e-wallets during the Covid-19 pandemic.

4. Finding and analysis

4.1 Demographic analysis:

	Dimensions	Number of observations	Percentage (%)
Age	Under 18	5	2.2
	18-25	168	75.0
	25-35	11	4.9
	35-45	18	8.0
	45-55	19	8.5
	Above 55	3	1.3
Relationship Status	Single	173	77.2
	Married	44	19.6
	Other	7	3.1
Occupation	Pupil	5	2.2
	Student	162	72.3
	Worker	28	12.5
	Civil servant	20	8.9
	Retired	3	1.3
	Other	6	2.6

4.2 The influence of Covid 19 on Vietnamese customers' behaviors toward using e-wallet

4.2.1 Perceived ease of use

The data we collected through our survey shows that top 5 types of e-wallets dominating the Vietnamese market are: Momo, ShopeePay, ZaloPay, ViettelPay, VinID Pay. Momo is considered as consumers' top choice, accounting for 79,2% in total. Following that, e-wallet users prefer ShopeePay and ZaloPay in the second and third ones, with 67,3% and 43,4% respectively.

ViettelPay (25,7%) and VinID Pay (23,9%) also have greater awareness and engagement through promotions and marketing campaigns.

With the development of e-wallet applications, more and more places use this way to attract customers. Observed in our research, there are 4 locations that regularly use e-wallet for payment: restaurant, supermarket, grocery store, and shopping mall. Grocery stores are dominant with the highest number (75,7%) based on the convenience in products and the frequency of customer visits. Supermarkets and shopping malls are the next choices, representing 69,5% and 62,4% respectively. Besides, customers pay most by e-wallet in restaurants with 43,8%.

Understanding more about customers' behavior through their most prefered-visit places, the data also shows the products that the customers are willing to make an e-wallet payment for. The first thing is personal belongings (75,2%) that are placed primarily in grocery stores. Clothes and food found in supermarkets and shopping malls follow the second and third level of e-wallet product payment, accounting for 73,5% and 66,8%.

About the reasons to make an e-wallet payment in these channels, there are 4 highlights in customers' views: the convenience, the promptitude, safety, and the promotion. The convenience (87,2%) is seen as the most outstanding benefit of e-wallet since it can be used in many places with different purposes. Secondly, customers prefer the promptness of e-wallet applying in a "just-a-second" process with a high number of 79.2%. Since they make many payments a day, promotion factor (69,9%) is also an attractive way to address the demand of e-wallet payment. Safety is the next reason, representing 45,1%.

4.2.2 Changing in frequency of e-wallet usage

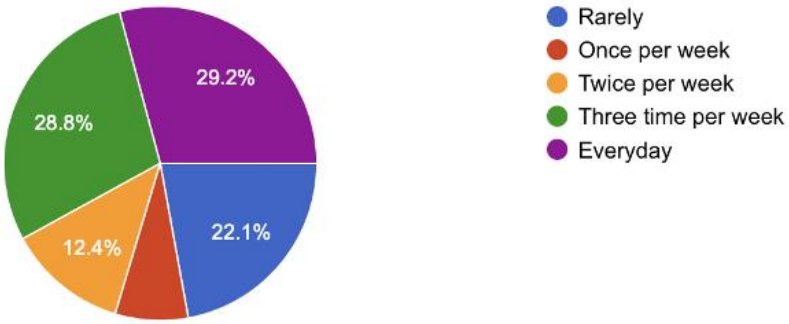

Figure 5. Frequency of E-wallet usage in a week

Source: Compiled by the authors

Through the survey, we could observe that the respondents were divided into 2 groups: Not often and often. "Not often" group included the answers of rarely, once per week and twice per week, which accounted for 42%. On the other hand, the "Often" group contained the answers of three times per week and everyday, which accounted for 58%. Therefore, the majority of respondents choose E-wallet as a trustworthy, time-saving everyday payment method.

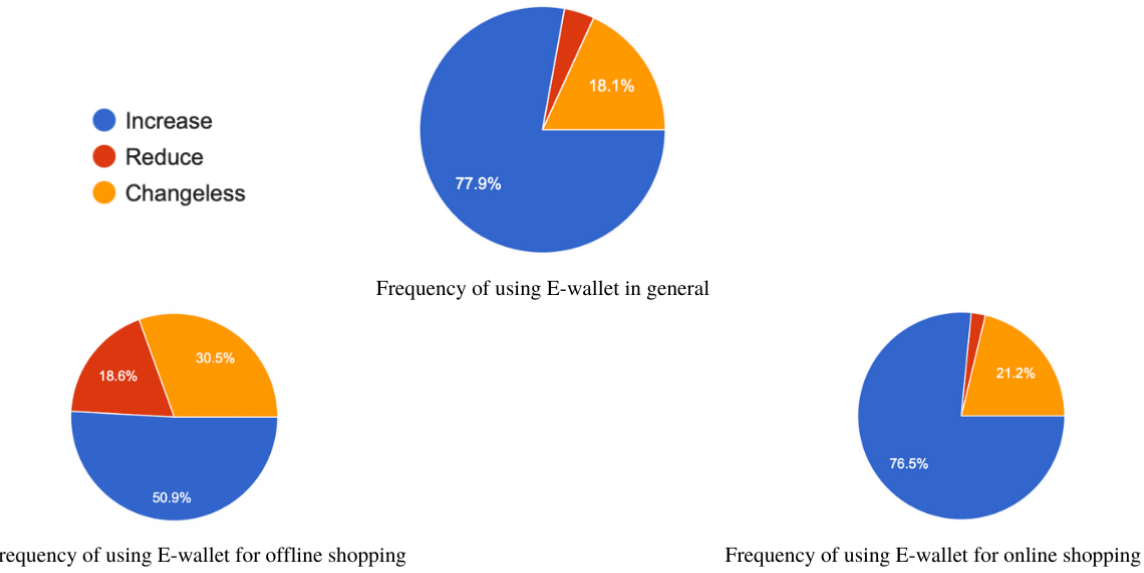

Figure 6. Change in Frequency of E-wallet usage after COVID-19

Source: Compiled by the authors

According to the results of the survey, 78.2% of respondents used e-wallets to make purchases more after the COVID-19 pandemic. The frequency of e-wallet usage of 17.8% remained the same during and after the COVID-19 season. Only 4% of the participants responded that their usage of e-wallets had decreased. Therefore, we can observe that the majority of users continue this payment habit thanks to its convenience, ease of use and good security.

However, the number of respondents whose frequency of using e-wallets for offline shopping increased only accounted for 51,1%. In addition, the usage frequency of 30.7% of people remained unchanged, and up to 18.2% of people reduced offline shopping purchases by e-wallet decrease compared to the COVID-19 pandemic.

Furthermore, in the survey questions about consumer shopping frequency after the COVID-19 pandemic, 76.4% of users answered that they utilized an E-wallet to shop more online, and 21.3% carried out no modification in the use of E-wallet payment methods both before and after the COVID-19 pandemic. Only 2.3% of people prefer to shop online with other payment methods than E-wallet.

As a result, we observed that users retain a pattern of using e-wallets to shop online more, and they tend to prefer to use other payment methods (such as cash, bank transfer,...) rather than using e-wallets when shopping offline. However, even online or offline, after employing an E-wallet in daily life and discovering this payment method's swift speed, comfort, and organized systems, most people continue or increase the frequency of use more.

4.2.3 Changing in wallet expenditures:

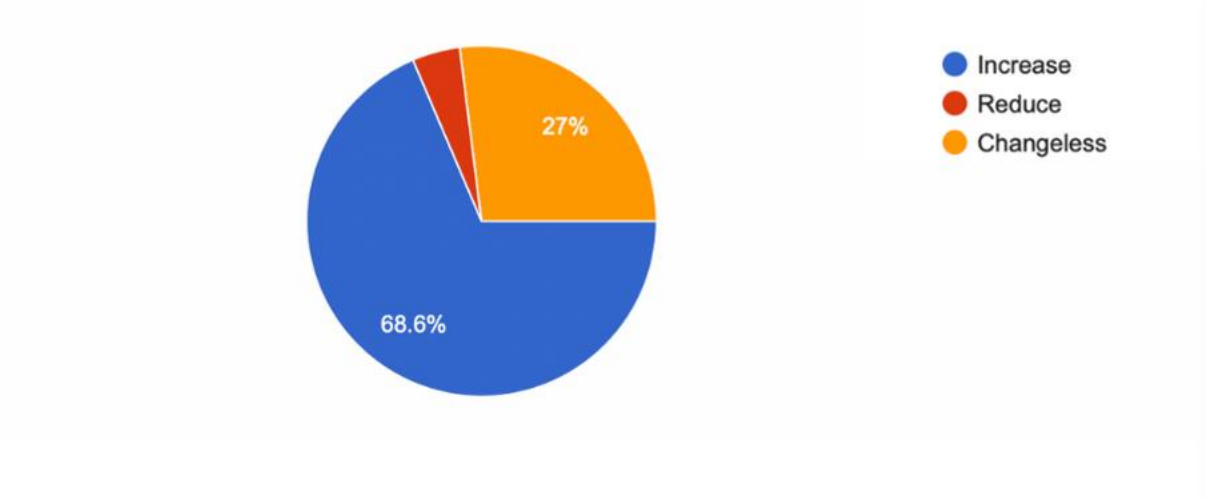

Figure 7. Changes in Respondents' expenditure when using E-wallet

Source: Compiled by the authors

According to statistical results, 68.9% of users increased their spending when using e-wallets compared to before initiating using this payment method. Moreover, 26.7% of respondents stated that the amount they spent on purchases did not alter; only 4.4% of users compressed spending and saved more after using e-wallets. Growth in usage frequency makes an essential contribution to increasing users' spending.

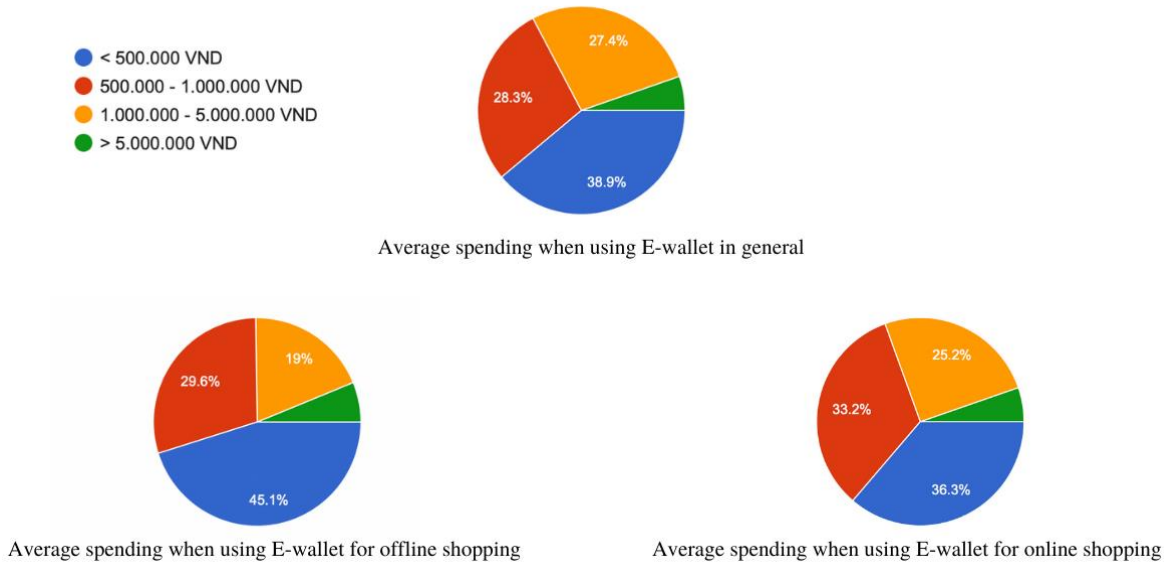

Figure 8. Average spending of people when shopping online/offline using E-wallets

Source: Compiled by the authors

As we can observe on the tables, most people spend less than 500.000 VND for their transactions using E–wallet, which accounted for 36.3% for online purchases and 45.1% for offline purchases. Very few people have enough trust on this payment method to spend more than 5.000.000 VND on average to shop. The result demonstrated that respondents prefer spending more money when shopping online (33.2% of people making transactions range from 500.000 - 1.000.000 VND and 25.2% making 1.000.000 - 5.000.000 purchases).

E-wallets extend the time between when a consumer makes a purchase and when they must pay for it, making the shopping experience less stressful. Therefore, many people tend to buy more online and offline things, making it challenging to manage to spend providently. The frequency and value of transactions carried out daily on e-wallets indicated the high demand for these services as well as their potential in future.

5. Conclusion:

According to statistics, the number of people using e-wallets and cashless payment applications has increased sharply in recent years, especially since the Covid-19 epidemic. The impact of the Covid-19 epidemic makes electronic payment forms more developed than ever. Payment shows that online payment has developed rapidly, in which e-wallets play an important role in helping people switch to cashless payment methods.

We all know that the execution of cash payment transactions in large volumes is easily used by criminals to commit fraud and evade tax obligations, and debt repayment obligations to banks or other creditors (VanSomeren, 2020). The risks in the payment, storage, and transportation of cash for organizations and individuals are always there. There have even been many very serious cases like being robbed as criminals know the object is transporting a large amount of cash. When cash is used a lot in payment transactions of a society, this will be a favorable environment for criminals to circulate counterfeit money. Moreover, changing payment habits from cash to cashless is a difficult process, when cash is still popular in today's purchases in Vietnam (Nguyen, 2021). In fact, in urban areas of class III, IV, V or in provinces that are far from special class cities and central municipalities, the banking system has not been widely disseminated. The number of transaction offices of banks in those areas is still low, which becomes one of reasons why people here have little opportunity to have contact with online payment methods such as: credit card payment, digital internet banking, mobile banking,... To change it, it is necessary to have new integrated payment methods that are more convenient for people and businesses in low-populated, sparsely populated areas and remote midlands to choose, especially in the context of the complicated situation of the COVID-19 epidemic.

This research was conducted with the participation of 220 people living and working in Vietnam, who have had experience in using e-wallets for transactions since before the COVID-19 epidemic occurred. Besides the scales used in previous studies, the article develops scales for some new variables. These scales have met Cronbach's Alpha reliability test. The regression results show that 4 factors, including: Perceived risk, Perceived usefulness, Payment security vs Social feedback have a direct influence on Vietnamese customers’s behavior toward using e-wallets during the COVID-19 period, in which Perceived Usefulness is the most influential factor. Our study research is hoped to be as much clear as possible to shed more light in deeply identifying how COVID-19 pandemic impacted on Vietnamese consumers' behavior to use e-wallets.

REFERENCES

The Qube Money Blog. (2020), "11 Disadvantages of Cash", Available at: https://blog.qubemoney.com/11-disadvantages-of-cash/ (Accessed 1 April, 2022).

ADMIN. (2021), "Tiêu chí phân loại đô thị loại 1,2,3,4,5 ở Việt Nam năm 2021", Available at: https://bacnamland.com/ban-do-hanh-chinh/tieu-chi-phan-loai-do-thi/ (Accessed 5 April, 2022).

Agarwal, S., Weichert, M., Graham, R. & Will, H. (n.d.), "10 Ways COVID-19 Is Impacting Payments".

Aji, H. M., & Dharmmesta, B.S. (2019), "Subjective norm vs dogmatism: Christian consumer attitude towards Islamic TV advertising", *Journal of Islamic Marketing*,Vol. 10 No. 3, pp. 961–980.

Davis, F., Bagozzi, R. & Warshaw, P. (1989), "User acceptance of computer technology: A comparison of two theoretical models", *Management Science*, Vol. 35 No. 8, pp. 982–1003.

de Almeida, P., Fazendeiro, P., & Inácio, P.R.M. (2018), "Societal risks of the end of physical cash", *Futures*, Vol. 104, pp. 47–60.

VietnamPlus. (n.d.), "Để nông dân bỏ thói quen dùng tiền mặt: Không thể một sớm một chiều", Available at: https://www.vietnamplus.vn/de-nong-dan-bo-thoi-quen-dung-tien-mat-khong-the-mot-som-mot-chieu/757218.vnp (Accessed 2 April, 2022).

Du Plessis, *et al.* (1991), *Consumer Behaviour. A South African Perspective*.

Hưng, Đ. (2020), "Thanh toán không dùng tiền mặt vướng ở đâu?", Nhịp sống kinh tế Việt Nam & Thế giới, Available at: https://vneconomy.vn/thanh-toan-khong-dung-tien-mat-vuong-o-dau.htm (Accessed 10 April, 2022).

Maser, B. & Weiermair, K. (1998), "Travel decision-making: From the vantage point of perceived risk and information preferences", *Journal of Travel & Tourism Marketing*, Vol. 7 No. 4, 107–121.

Minh, C. (n.d.), "Hướng đến chuyển đổi thói quen chi tiêu tiền mặt sang thanh toán bằng thẻ trong giới trẻ", Available at: https://dangcongsan.vn/kinh-te/huong-den-chuyen-doi-thoi-quen-chi-tieu-tien-mat-sang-thanh-toan-bang-the-trong-gioi-tre-567417.html (Accessed 21 April, 2022).

Tuổi Trẻ Online. (n.d.), "Mở khóa tâm lý chần chừ với thanh toán không tiền mặt của người Việt", Available at: https://tuoitre.vn/mo-khoa-tam-ly-chan-chu-voi-thanh-toan-khong-tien-mat-cua-nguoi-viet-20220323162153128.htm (Accessed 10 April, 2022).

Ngoc, M. (n.d.), "Top 10 Ví Điện Tử Thông Dụng Nhất Ở Việt Nam hiện nay", Available at: https://www.way.com.vn/top-10-vi-dien-tu-thong-dung-nhat-o-viet-nam-20.html_(Accessed 10 April, 2022).

Oh, S.-H., Paek, H.-J. & Hove, T. (2015), "Cognitive and emotional dimensions of perceived risk characteristics, genre-specific media effects, and risk perceptions: The case of H1N1 influenza in South Korea", *Asian Journal of Communication*, Vol. 25 No. 1, pp. 14–32.

Phúc, M. (n.d.), "Thanh toán không dùng tiền mặt: Vì sao vẫn khó?", *Nhịp sống kinh tế Việt Nam & Thế giới*, https://vneconomy.vn/thanh-toan-khong-dung-tien-mat-vi-sao-van-kho.htm (Accessed 21 April, 2022).

Tuổi Trẻ Online. (n.d.), "Thúc đẩy thanh toán không tiền mặt trong bối cảnh COVID-19", Available at: https://tuoitre.vn/thuc-day-thanh-toan-khong-tien-mat-trong-boi-canh-covid-19-20211008095509039.htm (Accessed 21 April, 2022).

VietnamPlus. (n.d.), "Để nông dân bỏ thói quen dùng tiền mặt: Không thể một sớm một chiều", Available at: https://www.vietnamplus.vn/de-nong-dan-bo-thoi-quen-dung-tien-mat-khong-the-mot-som-mot-chieu/757218.vnp (Accessed 2 April, 2022).

Tomorrow Marketers. (2021), "Toàn cảnh ngành Ví điện tử (E-wallet) tại Việt Nam 2021", Available at: https://blog.tomorrowmarketers.org/toan-canh-nganh-vi-dien-tu-e-wallet-viet-nam-2021/ (Accessed 21 April, 2022).

Upadhayaya, A. (2012), "Electronic Commerce and E-wallet", *International Journal of Recent Research and Review*, Vol. 1 No. 1, pp. 37-41.

Tuổi Trẻ Online. (n.d.), "Mở khóa tâm lý chần chừ với thanh toán không tiền mặt của người Việt", Available at: https://tuoitre.vn/mo-khoa-tam-ly-chan-chu-voi-thanh-toan-khong-tien-mat-cua-nguoi-viet-20220323162153128.htm (Accessed 21 April, 2022).

Venkatesh, V. & Davis, F. (2000), "A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies", *Management Science*, Vol. 46, pp. 186-204.

Vũ, Đ. (2021), "Thanh toán không tiền mặt bùng nổ, nhưng tiền mặt vẫn quá nhiều", *Nhịp sống kinh tế Việt Nam & Thế giới*, Available at: https://vneconomy.vn/thanh-toan-khong-tien-mat-bung-no-nhung-tien-mat-van-qua-nhieu.htm (Accessed 21 April, 2022).

Webster, J., Trevino, L.K. and Ryan, L. (1993), "The Dimensionality and Correlates of Flow in Human-Computer Interaction", *Computers in Human Behavior*, Vol. 9, pp. 411 - 426.