

## DETERMINANTS OF INTENTION TO USE FINTECH PAYMENT SERVICES: EVIDENCE FROM VIETNAM' GENERATION Z

Nguyen Thi Hoai Phuong  
Nguyen Dieu Thuy  
Tran Linh Giang  
Bui Thi Ngoc Han  
Tieu Hoang Hieu  
Nguyen Tan Long

### ABSTRACT

*Along with the advancement of FinTech, research in this subject is becoming more diversified and complicated with a wider scope. Few scholars have studied the influence of social precursor factors on the intention of using FinTech services (Al-Nawayseh, 2020). This paper proposes an improved UTAUT that incorporates trust, security, and COVID-19 perceived risk as determinants of Gen Z's intention of using FinTech payment services and its interaction with social-demographics including gender, education level, and income. Data analysis outcomes collected from 568 Gen Z people showed that seven factors including performance expectancy, COVID-19 perceived risk, security, social influence, effort expectancy, trust, facilitating conditions had a significantly positive effect on the intention of using the given services, in descending order. Furthermore, demographics were found to have a significant moderation which would provide better insights into the demographic disparities that influence FinTech payment services usage intention. On this basis, the study helps researchers to come up with more comprehensively related frameworks and give certain recommendations for governmental authorities and FinTech companies so that they can develop FinTech payment applications suitable for Gen Z as well as improve business efficiency.*

Keywords: FinTech payment services, determinants, Gen Z, COVID-19, UTAUT, intention to use.

### INTRODUCTION

Technology has been constantly making remarkable changes in every aspect of human activities. One technology that can be said to create a breakthrough in the financial and banking industry is financial technology (FinTech), a result of a combination of financial products and services with technology (Citigroup, 1990). Of all categories of FinTech, payments arise as a significant innovation having an impact on how people make transactions, which previously occurred face to face and involved carrying a certain amount of cash, can now be done within seconds online or via smartphone-based platforms, irrespective of the distance. With such attributes, FinTech payments services provide users with a variety of benefits such as speed, convenience, and reliability.

Vietnam is one of the most prospective countries for the development of FinTech payment services as well as the FinTech industry in general. This is directly attributed to the fact that Vietnam's population has a large proportion of young people with a high level of technology literacy, along with high rates of smartphone and Internet penetration (Tung, 2019). The people in Vietnam have long preferred using cash for their daily transactions, however in recent years, specifically since the outbreak of the COVID-19 pandemic, they have witnessed a significant shift away from physical money toward digital payments services. This switch mainly takes place among young people of Generation Z due to their preceding fundamental understanding of technology along with a high level of adaptability to innovation. Liébana-Cabanillas et al. (2014) conducted research on factors that influence the adoption of new mobile payment systems. The result indicated that external influences (i.e. social influence and subjective norms), ease of use, perceived usefulness, perceived risk, trust, and attitude all have a certain impact on the acceptance of mobile payment systems by consumers. Upadhyay and Chattopadhyay came up with a similar result in their study about issues affecting Indian's usage intention of mobile-based payment services. Usefulness, ease of use, trust, attitude, and subjective norms are also confirmed by various models such as TAM (Technology Acceptance Model) and UTAUT (Unified Theory of Acceptance and Use of Technology) to be the factors having significant impact on users' adoption and continued usage intention of technology. In another study by Sfenrianto et al. (2017), culture, security, effort expectancy, performance expectancy, and social influence were inspected to determine whether these factors affect consumers' intention to use electronic payments for their e-commerce transactions.

Based on several previous studies, this research examines the determinants affecting the intention of using FinTech payments services by investigating factors namely performance expectancy, effort expectancy, social influence, facilitating conditions, trust, security, and COVID-19 perceived risk as well as using gender, income, education level as moderating variables. The difference here is that this paper focuses on FinTech payments services usage intention of Gen Z (within the age group of 15 to 27 currently living in Hanoi) in the context of COVID-19 pandemic. Thus, the result of this study would make a contribution to the literature on FinTech payment services and help FinTech companies to develop FinTech payment applications and services that attract more customers in Vietnam, especially Gen Z.

## LITERATURE REVIEW

### FinTech and FinTech payment

Since FinTech was first mentioned in 1990 by Citigroup to date, there has not been any accurate definition that researchers all agreed on for this term. Some researchers approach FinTech by assessing it from an institutional perspective. Freedman (2006), one of the pioneers of this theory, argued that FinTech is a system for modeling, pricing, and processing financial products. After Freedman (2006), Ernst and Young (2019) defined FinTech as organizations that combine innovative business models and technology to realize and enhance financial services, implying that all organizations can become part of FinTech as long as they can create new business models and develop related supporting technology. On the other hand, a group of researchers described FinTech as a part of the process of innovation, information transformation, and digitization. Arner et al. (2015) indicated that FinTech refers to the digitized or technology-enabled process of financial solutions while Lee and Kim (2015) argued that FinTech is the technical process that comes from developing and establishing new financial software that can affect the traditional system. Many other researchers have defined FinTech as a division or service of an enterprise. Specifically, according to Chuen and Teo (2015), FinTech links with financial software solutions provided by non-financial organizations based on innovative technology. Based on this opinion, Arner et al. (2015) propose that FinTech is not limited to a specific business model or sector, but it encompasses the entire range of products and services that the financial industry offers. Recently, FinTech is also described as a financial technology division in a company that aims at improving service quality and management efficiency by using new information technology (Gai et al., 2018). The Financial Stability Board (2019) has defined FinTech as a technological innovation that can help to enhance market access, introduce new products, and reduce costs for customers.

Among various FinTech services that take advantage of innovative technology, FinTech payment services refer to FinTech whose services and applications involve domestic and international payment transactions. This segment can be divided into two main subsegments which are alternative payment methods and blockchain along with cryptocurrency. When it comes to alternative payment methods, the majority of research papers refer to the term "mobile payments". Mobile payments can be defined as any payment service that users carried out using a mobile device. This sub-segment includes several types of remote as well as physical payment services (Ramos de Luna et al., 2019). First, payments can be conducted via point of sales services, for example, near-field communication technology (NFC), which enables customers to make transactions through a secured portal (Liébana-Cabanillas et al., 2018). Second, mobile payments also consist of innovative technologies such as mobile wallets (mwallet) and quick response (QR) code (Liébana-Cabanillas et al., 2015). Besides these services, there are a few more remote payment services namely internet payments and mobile banking, SMS, etc (Sorensen, 2018). As for blockchain, this term was first introduced in 2008 as a peer-to-peer payment system for electronic transactions that allows different financial institutions to make payments to each other without going through an intermediary (Fernandez-Vazquez et al., 2019). Cryptocurrencies are the most common example that is intrinsically tied to blockchain technology. This form of currency has brought a new method of payment to replace traditional forms of fiat money.

Unlike traditional payment services, Fintech payment services allow customers using a certain financial institution to use a customized payment service that is not dependent on the financial institution's payment service but is personalized to the user's convenience (Kang, 2018). Furthermore, FinTech payment services offer a greater deal of variety in terms of purposes and usage methods than traditional payment services as their providers can personalize payment services not only for customer demands but also for merchant needs. Similar to the role of FinTech services in general, Fintech payment services have provided fast, safe, and convenient modern payment methods for customers, significantly contributing to changing payment habits using cash all around the world.

Cities have raced for millennia to become financial centers; today, they compete to become FinTech hubs. FinTech has become a global phenomenon with strong international companies from Silicon Valley to London, Israel, Singapore and Sydney (Varga, 2017). Especially in the US, FinTech has rapidly grown as a major industry with the total spending on FinTech amounted to more than 197 billion USD, and about 12 billion USD worth of investment was continuously poured into startups in 2014. In Australia, FinTech has seen substantial expansion. In addition to a five-fold rise in the number of FinTech businesses in only five years, Australia's industry also boasts a varied selection of startups operating across numerous FinTech subsectors such as payments, wallets, supply chain, blockchain, insurance... (Statista Research Department, 2022). Besides, about 60% of the country's digitally active citizens consider themselves FinTech users as of 2019 (Statista Research Department, 2022). Besides, smaller countries such as Malta, Belarus, Gibraltar, Luxembourg, etc... are also vying for developing FinTech services. This rapidly evolving market structure may increase efficiency and competition while also posing a threat to financial stability and integrity (Grima and Thalassinou, 2020).

### Determinants of intention to use FinTech payment services

#### Performance expectancy

Performance expectancy is referred as the degree to which an individual feels that adopting the system will assist him or her in improving work performance (Venkatesh et al., 2003). Most of the regarded studies indicated that performance expectancy is a key element influencing consumers' decisions to use technology (Chuang et al., 2016; Oliveira et al., 2016; Ramos, 2017; Aseng, 2020). Performance expectancy is similar to perceived usefulness in the TAM/TAM2 model. Other researches by Kim et al. (2017), Le et al. (2019), Lien et al. (2020), Alswaigh and Aloud (2021) proved that a rise in perceived usefulness leads to a higher degree of usage intention. Hence, we propose the following hypothesis:

*H1: Performance expectancy has a positive influence on Intention to use FinTech payment services.*

### **Effort expectancy**

The majority of prior research has found that effort is one of the factors influencing user acceptability of FinTech services. Effort expectancy is defined as the degree of ease associated with the use of the system (Venkatesh et al., 2003). This factor has been developed based on the perceived ease of use in the TAM model and is similar to a number of factors such as ease of use (IDT model), complexity (MPCU model). A number of studies, including those by Gao and Chau (2020), Aseng (2020), Alswaigh and Aloud (2021), Lien et al., (2020) found a favorable association between this feature and the desire to utilize FinTech payment services. As a result, we provide the following hypothesis:

*H2: Effort expectancy has a positive influence on Intention to use FinTech payment services.*

### **Social influence**

Social influence is defined as the degree to which an individual perceives that people who are important to them believe they should or should not use a technology or perform a certain action (Hsu and Lu, 2004; Venkatesh and Bala, 2008; Venkatesh and Davis, 2000). According to Liébana-Cabanillas et al. (2018), users frequently act in specific ways in order to satisfy the expectations of their family, friends, and relatives. Many Indian studies indicated that social influence is a key factor that has a positive relationship with the behavioral intentions of users (Singh, 2016; Thakur and Srivastava, 2014; Upadhyay and Chattopadhyay, 2015). Thus, we propose the following hypothesis:

*H3: Social influence has a positive influence on Intention to use FinTech payment services.*

### **Facilitating conditions**

The term "facilitating conditions" refers to the circumstances in which a person feels that the technological infrastructure is set up to aid in the usage of the system and to encourage the adoption of new technologies (Venkatesh et al., 2012). Many studies revealed that there is a positive relationship between facilitating conditions and intention to use electronic payment services (Chawla and Joshi, 2019; Gupta and Arora, 2019; Moorthy et al., 2020; Khatun and Tamanna, 2020). According to Chawla and Joshi's (2019), facilitating conditions have a significant positive impact on consumers' intentions to utilize e-wallet services. Hence, we propose the following hypothesis:

*H4: Facilitating conditions have a positive influence on Intention to use FinTech payment services.*

### **Trust**

Customer trust in FinTech payment services has appeared in many previous studies. Trust is commented to be crucial for technology adoption, especially those designed for financial transactions (Kim et al., 2009; Shao et al., 2018). Trust is defined as subject A's willingness to be vulnerable to subject B's actions based on the expectation that subject B will perform a specific action that is important to subject A, regardless of subject A's ability to monitor or control subject B (Davis, 2020). Many researches have shown a positive link between trust and the intention to use FinTech payment systems (Al-Nawayseh, 2020; Alkhowaiter, 2020; Chawla and Joshi, 2019; Singh and Sinha, 2020; Chawla and Joshi, 2020). Thus, we propose the following hypothesis:

*H5: Trust has a positive influence on Intention to use FinTech payment services.*

### **Security**

According to Chawla and Joshi (2019), security refers to the degree to which clients think it is secured to utilize FinTech payment services. In other words, enterprises must provide user safety and security so that consumers may completely trust and feel comfortable when using services. Many previous studies have shown the importance of security for the intention to use FinTech payment services (Tan and Teo, 2000; Black et al., 2002). Therefore, we propose the following hypothesis:

*H6: Security has a positive influence on Intention to use FinTech payment services.*

### **COVID-19 perceived risk**

Most of researches exploit perceived risk factor from the perspective of financial risk or risks related to issues such as privacy or security. However, there have been very few previous studies that have examined perceived risk factor in terms of disease risk. The COVID-19 epidemic, according to Aji et al. (2020), had a detrimental influence on Malaysian and Indonesian consumers' intentions to use cash, resulting in a considerable increase in the usage of e-wallets. The World Health Organization (WHO) has recommended people to use contactless digital payment systems for personal financial transactions, since the usage of cash and other forms of payment that involve direct human contact can contribute to the spread of COVID-19 (Durr, 2020). Therefore, the

use of mobile payment services is considered as a preventive health measure against the possibility of virus transmission (Sreelakshmi and Prathap, 2020). As a result, we propose the following hypothesis:

*H7: COVID-19 perceived risk has a positive influence on Intention to use FinTech payment services.*

### **Demographic**

The demographic factors - the moderating variables - form the next group of factors influencing behavioral intention to use FinTech payment services. Age, gender, income, and education level are commonly used demographic factors; however, because the study's scope is confined to Gen Z, the variables proposed are gender, income, and education level.

In previous studies, gender was shown to have an impact on customer adoption of technology. Yu (2012) found that gender has a great influence on the effect of expected performance and favorable conditions to the intention to use. Men, in particular, are more aware of the benefits of mobile banking and are more influenced by favorable circumstances than women. However, Venkatesh et al. (2012) demonstrated that favorable conditions carry greater significance for older women. As a result, we provide the following hypothesis:

*H8.1 to H8.7: Factors (by model respectively) affecting the intention to use FinTech payment services differ between men and women.*

Solarz and Swacha-Lech (2021) demonstrated that households with higher incomes are more likely to employ sophisticated FinTech services than families with lower incomes. However, this is a contradictory direction. Other researches, such as those by Flavián (2006), Mallat (2007), Das and Das (2020), etc. confirmed the relationship between income and the use of advanced technologies such as FinTech services or mobile payment services. Thus, we propose the following hypothesis:

*H9.1 to H9.7: Factors (by model, respectively) affecting the intention to use FinTech payment services have differences between monthly income.*

Besides factors such as gender and income, education level is also one of the demographic variables used in previous studies. High levels of education are significantly linked to improved information processing capacity and increased trust, both of which are important determinants in FinTech adoption (Huang et al. 2012; Kim et al., 2018). Rogers (2010) found that people with a high degree of education are more likely to accept technological advancements than others in a research on technology adoption. When establishing that the education level of survey participants has a beneficial influence on acceptance of online banking services, Szopiski (2016) also noted the connection between education level and the willingness to embrace innovation in another study. Hence, we propose the following hypothesis:

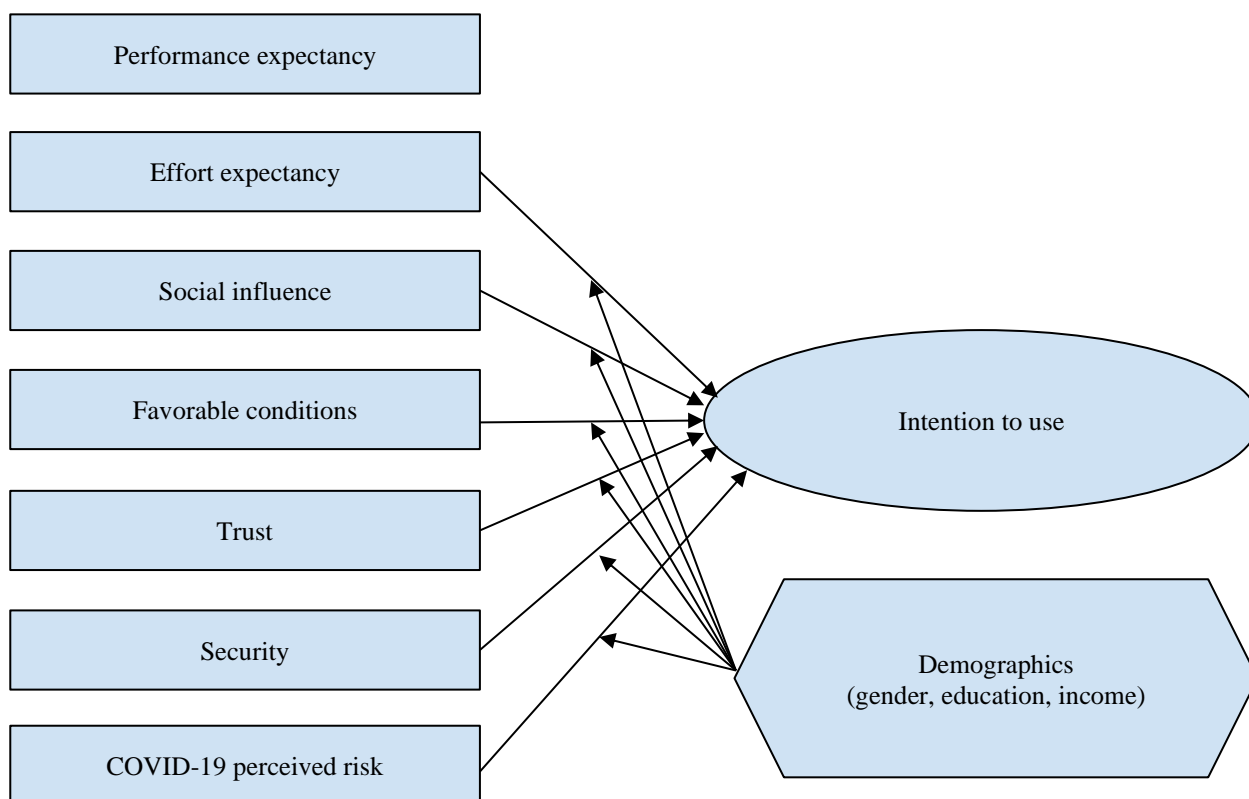
*H10.1 to H10.7: Factors (by model, respectively) affecting the intention to use FinTech payment services have differences between education level.*

## **METHODOLOGY**

### **Empirical model**

In the field of technology and information studies, various theoretical models have been proposed to predict the adoption and use of technology (Venkatesh et al., 2003), the most popular of which being TAM and UTAUT. The former has been found to be extremely accurate and effective in assessing and forecasting the acceptability of information systems and technologies as well as electronic services (Davis et al., 1989; Gefen and Straub, 2003). TAM, on the other hand, has some significant flaws, one of which is the failure to address external environmental aspects including social and demographic characteristics. UTAUT is a theory that has recently piqued the interest of many researchers for its research model that better explains the intention to use services and technology by adding other factors such as social influence, favorable conditions, demographics (gender, age, experience, etc.) rather than considering expected performance and expected effort (similar with perceived usefulness and perceived ease of use in the TAM model). However, UTAUT did not investigate the need for security (Shin, 2010) or trust (Zhou et al., 2010) while those two factors do exist and have a substantial impact on using technology services. Basically, the model preserves the key variables while adjusting and expanding to investigate the impact of other factors relevant to the research context.

Figure 1: The empirical model



Source: Authors

The authors designed a questionnaire with 29 observations including 7 independent variables and 1 dependent variable. The item of each observed variable was expressed by a 5-level Likert scale ranging from strongly disagree, disagree, uncertain, agree, to strongly agree. Specifically, performance expectancy with 4 observations that adopted from Venkatesh et al. (2012); effort expectancy with 4 observations that adopted from Venkatesh et al. (2012); social influence with 3 observations that adopted from Venkatesh et al. (2012); facilitating conditions with 4 observations that adopted from Ajzen (1991), Taylor and Todd (1995), Venkatesh et al. (2012); trust with 4 observations that adopted from Pavlou (2002), Muñoz (2008); security with 4 observations that adopted from Flavián and Guinalú (2006); COVID-19 perceived risk with 3 observations that adopted from Aji et al. (2020); and intention to use is measured by 3 observations that adopted from Davis et al. (1989), Venkatesh et al. (2012).

### Research method

The authors collected research data from Gen Z people within the age group of 15 to 27 living in Hanoi via online questionnaires sent on popular social media platforms as well as some forums for young people. A total of 620 responses were collected in this study. After preliminary screening by removing heterogeneous elements, 568 valid responses were included for an effective response rate of 91.61%.

Data collected was processed and analyzed with the support of SPSS 25 and AMOS 24 software. Specifically, there was descriptive analysis into statistics to describe a general characteristics of sample; the reliability of the scale was tested by Cronbach's Alpha method to check the consistency of each factor; exploratory factor (EFA) was analyzed to verify the value of the scale; confirmatory factor (CFA) was analyzed to evaluate convergent and divergent validity; the relationship between variables was modeled based on the linear structural model (SEM); significant differences in group-specific parameter were determined and compared to estimate by multi-group analysis.

## RESULTS

### Descriptive analysis

The data related to Gen Z in Hanoi as participants was collected through questionnaire using Google Form. Among total number of 620 respondents, 568 of them were valid for further investigation. Of which, 33.8% stated that they have never used any Fintech payment services and the remaining have used such services.

Table 1. Descriptive statistics

	Frequency	Percentage (%)
<b>Sex</b>		
Male	159	28
Female	409	72
<b>Education level</b>		
Undergraduate	509	89.6
Postgraduate	25	4.4
High school	28	4.9
Others	6	1.1
<b>Monthly earning</b>		
Below 3 million VND	364	64.1
03 – 05 million VND	111	19.5
05 - 10 million VND	53	9.3
Over 10 million VND	40	7

Source: Authors

The table shows that the proportion of female respondents is 3 times as much as the proportion of male respondents, which are 72% and 28% respectively. The majority of participants are undergraduates with the highest monthly earning of below 3 million VND.

#### Reliability analysis

Cronbach's Alpha coefficient of all the variables ranges from 0.6 to 0.95 with the highest Cronbach's Alpha coefficient belonging to intention to use, accounting for 0.887. The corrected item-total correlation is greater than 0.3, indicating that all the items on the scale are considered to be reliable.

Table 2. Cronbach's Alpha Reliability Results

	Observations	Cronbach's Alpha	Corrected item-total correlation
Performance Expectancy	4	0.806	~ 0.6
Effort Expectancy	4	0.802	~ 0.6
Social Influence	3	0.749	~ 0.6
Facilitating Conditions	4	0.795	~ 0.6
Trust	4	0.850	~ 0.7

Security	4	0.837	~ 0.7
COVID-19 Perceived Risk	3	0.751	~ 0.6
Usage Intention	3	0.887	~ 0.8

Source: Aggregated from analysis

**Exploratory Factor Analysis (EFA)**

The Sig. value of Bartlett's Test of Sphericity = 0.000 and Chi-square = 6765.844 conclude the sample size is sufficient. Moreover, the coefficient of KMO is 0.875 which is greater than 0.5 and smaller than 1 and the Eigenvalue is 1.207 (> 1), suggesting that EFA analysis is suitable. Therefore, the observed factors are accepted for further analysis. Besides, the total variance extracted is calculated at 55.833%. This means that these factors explain 55.833% of the variance in the data. The result of measurement also unveils that all the 8 factors are classified as valid which ensures discriminant validity between the factors, as the loading factors are greater than 0.5.

**Table 3. The result of KMO and Bartlett's test**

<b>Kaiser-Meyer-Olkin Measure of Sampling Adequacy</b>		.875
<b>Bartlett's Test of Sphericity</b>	<b>Approx. Chi-Square</b>	6765.844
	<b>df</b>	406
	<b>Sig.</b>	.000

Source: Aggregated from analysis

**Confirmatory factor analysis (CFA)**

The CFA result shows that CMIN/df = 1.278 < 3, p = 0.000, TLI = 0.983, GFI = 0.949, and CFI = 0.985. These indicators imply that the theoretical model and the realistic model have no differences. Other indicators: RMSEA index < 0.06 and PCLOSE index > 0.05 show that the model has a proper fit to the market data collected.

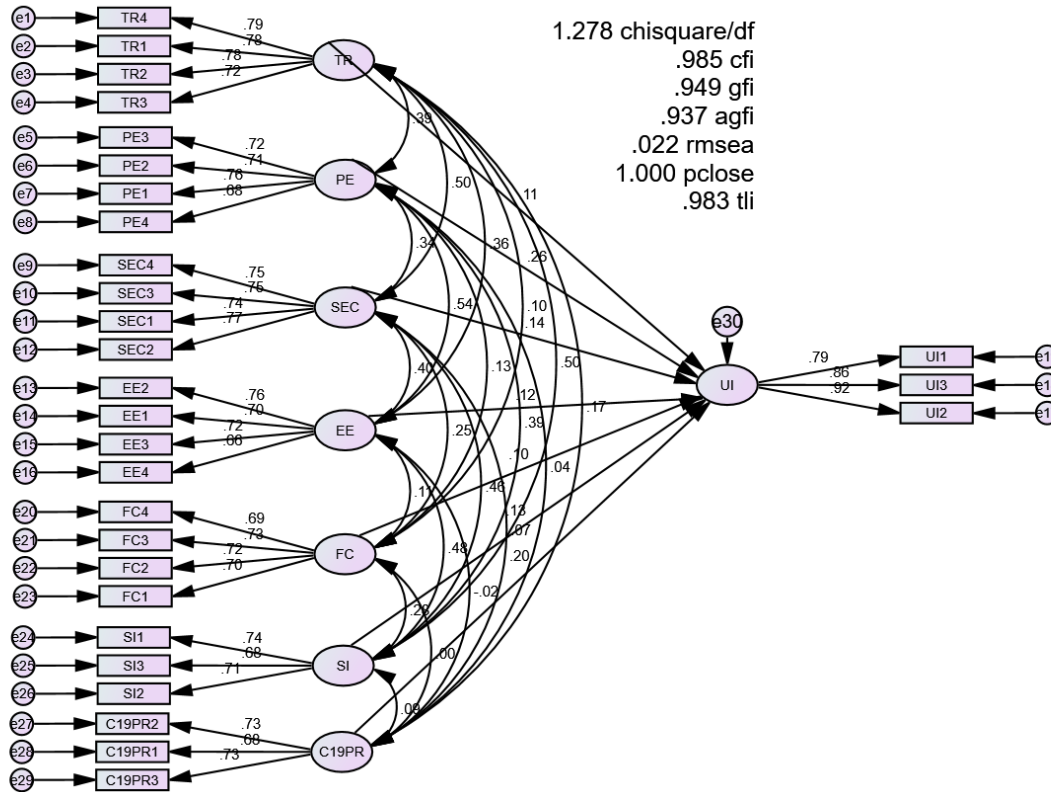
**Table 4. Model Fit Indexes**

	<b>CMIN/df</b>	<b>CFI</b>	<b>GFI</b>	<b>TLI</b>	<b>RMSEA</b>	<b>PCLOSE</b>	<b>P-value</b>
Estimate	1.278	0.985	0.949	0.983	0.022	1.000	0.000
Condition	≤ 3	≥ 0.9	≥ 0.9	≥ 0.9	≤ 0.06	≥ 0.05	< 0.05
Result	Good	Very good	Good	Good	Good	Good	Accepted

Source: Aggregated from analysis

Structural equation modeling (SEM)

Figure 2. Unstandardized Structural Equation Model



Source: Authors

According to Figure 2, the fitness indices of the hypothesis testing are followed: Chi – squared / df = 1.278 (< 3), GFI = 0.949 (> 0.8), CFI = 0.985 (> 0.9), RMSEA = 0.022 (< 0.06). The model achieves compatibility with the market data.

Table 5. Structural equation modeling test’s results

	Unstandardized Coefficients				Standardized Coefficients
	Estimate	S.E	C.R	P	Estimate
UI <--- PE	0.287	0.061	4.748	***	0.257
UI <--- EE	0.14	0.065	2.168	.030	0.124
UI <--- TR	0.119	0.057	2.099	.036	0.113
UI <--- SEC	0.153	0.056	2.718	.007	0.142
UI <--- FC	0.12	0.051	2.345	.019	0.103
UI <--- SI	0.154	0.069	2.216	.027	0.133
UI <--- C19PR	0.231	0.051	4.573	***	0.199
<b>R2 = 0.426</b>					

Source: Aggregated from analysis

Based on the information on table, since the p-value of each item is below 0.05, all the independent variables have an impact on the dependent one “Usage Intention”, thereby no hypothesis being rejected. The testing results provide a direction that the

relationship between the items and the intention to use FinTech payment services is positive, this can be seen from the unstandardized coefficients above 0. Observing the standardized coefficients, the study discovers that “Performance Expectancy” has the most significant effect on “Usage Intention” with the estimate of 0.257, followed by “COVID-19 Perceived Risk”. Meanwhile, “Facilitating Conditions” contributes least influence towards the intention of using FinTech payment services in Gen Z.

The result of the R squared coefficient is 0.426, which means 42.6% of the variability of the dependent variable is explained by the independent indicators.

### **Multigroup**

The result of Multigroup analysis indicates that the demographics (gender, education level and income) have a moderating effect on the observed variables.

Specifically, females are more likely to opt for FinTech payment services which ensure the security, user-friendliness and are recommended by relatives, whilst these factors have insignificant influence over males. However, trust is a prominent factor in determining the intention of males’ using the services.

In terms of education level, “Trust”, “Facilitating Conditions” and “Social Influence” are among the factors affecting the behavioral intention of college and university graduates. In contrast, others appreciate the convenience, ease of use and efficiency when deciding whether to use FinTech payment services or not.

Regarding monthly earnings, those whose monthly income is over 5 million VND seem not to be affected by the constructs except for “Performance Expectancy”. However, “Security”, “Trust”, “Facilitating Conditions” and “COVID 19 Perceived Risk” are perceived to exert considerable influence over those with the income of below 5 million VND per month.

## **DISCUSSION AND RECOMMENDATION**

- **Discussion**

Previous research on FinTech service focused mostly on technology acceptance factors such as perceived usefulness and perceived ease of use (Chuang et al 2016; Alswaigh and Aloud, 2021). However, the adoption of FinTech payment services is mainly influenced by external factors such as social influences, risks and trust (Ramos, 2017; Al-Nawayseh, 2020). In addition, few scholars have studied the influence of social precursor factors behind the usage intention of FinTech services. To fill this research gap, the study innovates the UTAUT model by adding three elements with COVID-19 perceived risk, trust and security. Moreover, previous research has not focused on Generation Z, especially their intention to use FinTech payments service while they are familiar with the use of technology for financial transactions as well as easily adapt to new technologies. Thus, the research identifies seven factors that have directly positive impact on Gen Z’s intention to use FinTech payment services, together with social-demographics such as gender, education level and income. In ascending order of impact level, these factors include:

### **Performance expectancy**

Performance expectancy (PE) is the most influential factor compared with others. According to the research data, performance expectancy is also the biggest motivation for non-users to experience FimTech payment services. This result reinforces the study of (Venkatesh et al., 2012; Chuang et al., 2016; Oliveira et al., 2016; Ryu, 2018; Ramos, 2017; Aseng, 2020; Alswaigh et al., 2021,...)

### **COVID-19 perceived risk**

The second factor having impact on usage intention is COVID-19 perceived risk. Since social distancing, FinTech payment services have become a useful alternative to traditional payment methods. As the COVID pandemic break out and the number of infections increased, the fear of the virus in cash made “conservative” customers see the appeal of FinTech and change their payment habits. This result is consistent with the work of Daragmeh (2021), Al-Nawayseh (2020), Sreelakshmi and Prathap (2020), Aji et al. (2020)

### **Security**

Security is the third impactful factor affecting Gen Z usage intention. Security has a close relationship with customer’s perceived risk during the process of using FinTech services. At the same time, in the financial sector, more innovation will lead to higher potential risk (Al-Nawayseh, 2020). That’s why security is one of the most impactful factors for customer intention to use innovative technology such as FinTech. The study once confirmed the importance of Security matching with the research by Yang (2009), Alswaigh and Aloud (2021), Hernandez and Mazzon (2007) but disputing the findings of Kim et al. (2017) and Al-Nawayseh (2020) in the context of Covid 19 pandemic. The conclusion of Al-Nawayseh (2020) indicates that Security does not influence customer’s intention to use FinTech because the effect of perceived COVID-19 risk has hidden the concern about security.

### Social influence

Another important factor that has significant impact is social influence. This result is appropriate with the characteristics of Gen Z customers who tend to get advice from relatives as well as reading reviews from influencers and previous users before choosing a service. The finding is consistent with the study by (Yang et al., 2015, Liébana-Cabanillas et al., 2018)

### Effort expectancy

Next element that has an impactful effect on Gen Z intention to use FinTech payment service is Effort expectancy. The result support the idea of Gefen et al. (2003), Chuang et al (2016), Giao and Chau (2020), Aseng (2020), Alswaigh and Aloud (2021), Lien et al (2020) but disagree with the views of Ramos (2017) and Daragmeh et al. (2021). Gen Z consumers are demanding and efficient because they want purchasing efficiency. If they face any barriers, they will find relative alternatives.

### Trust

Subsequently, Trust is the sixth factor influencing FinTech payment service among Gen Z. This study completely reinforces the findings by previous academics (Alkhowaiter, 2020; Singh and Sinha, 2020; Chawla and Joshi, 2020). Because Gen Z is the actual generation, they will choose services based on certain and realistic factors such as the efficiency and convenience of the service, instead of trusting what businesses committee to perform.

### Facilitating conditions

The last factor that has positive influence on Gen Z usage intention is facilitating conditions. Gen Z was exposed to technology at young age, at the same time, they often learn new things on their own instead of depending on support from others. Thereby, the effect of Facilitating conditions does not much influence their usage intention. The outcome is similar to the conclusion of Gupta and Arora (2019), Chawla and Joshi (2019), Moorthy et al. (2020), Alswaigh and Aloud (2021).

### Demographics

Based on collected data, the number of surveyed people who have not used FinTech services is 192/568. The most particular reason is they never know this term or services (accounted for 61.2%). This is followed by participants having security concerns (19.9%); those not assuming the service are effective (10.7%) and those feeling the payment process is complicated (8.2%). Besides, FinTech payment services are mainly accessed by women whose intention to use FinTech is governed by security, effort expectancy, facilitated conditions, and social influence. At the same time, men are more dependent on performance expectancy, COVID-19 perceived risk and trust. Based on the results, performance expectancy and effort expectancy affect all income groups. Particularly, the group with income lower than 5 million VND is more concerned with trust, security, facilitated condition and COVID 19 - perceived risk. Besides, the group with income above 5 million VND is not affected by these factors. The difference in education level also decides factors affecting Gen Z intention to use FinTech payment services. While undergraduate group is influenced by trust, social influence and facilitated conditions, high school and postgraduate groups pay attention to performance expectancy, effort expectancy and security.

#### • Recommendation

To help increasing number of users as well as retaining current customers, especially Gen Z ones, the authors propose some recommendations for government agencies and FinTech companies in Vietnam.

**For government agencies:** it is essential to continuously improve the legal framework to adjust FinTech payment service and noncash payment system; support the cooperation; strengthen, promote and adopt policies to develop cooperation between FinTech companies and banks; at the same time reinvest in technology infrastructure to ensure information security

**For FinTech companies in Vietnam:** Firstly, FinTech companies should increase customer awareness of the usefulness of FinTech payment services by developing a diversified FinTech payment ecosystem that integrates useful features. Secondly, it is noticeable that preparing technology infrastructure as well as upgrading transmission speed, and high-capacity bandwidth will improve customer satisfaction. Thirdly, another key factor for users to trust and use the service for a long time is minimizing risks arising from the provision and use of services by ensuring safety and security when making transactions and verifying customer identity. Fourthly, creating a friendly app with online marketing strategy will easily approach potential Gen Z customers.

**For customers:** Those who are currently using FinTech payment services should improve security awareness, especially personal information security, password information, PIN, etc. At the same time Generation Z should be proactive to increase awareness of technology and be ready to experience new applications.

#### • Limitation

Besides the contributions, the study has some limitations that need to be considered in order to build orientations for future research papers. Due to limited time and source, the sample collected from this study was still small. Our research just focused on Generation Z living in Hanoi, thus this sample could not represent the whole country. This may lead to bias in results, which can thereby affect the generalizability of the conclusion. Therefore, we suggest next research carry out surveys in other cities. Another concern is that data was collected by online surveys only. In fact, the result would be more accurate by qualitative data from in - depth interviews with FinTech experts and customers. In addition, this study illustrated seven factors affecting intention to use FinTech payment

services. However, squared multiple correlations of each factor were 40-50 percent, showing that there should be several dependent variables. In addition, demographic factors such as gender, income and academic level were used to divide surveyed people. In future research, other factors like employment status, age, etc. should be considered as well.

## REFERENCES

- Aji, H. M., Berakon, I., & Md Husin, M. (2020). COVID-19 and e-wallet usage intention: A multigroup analysis between Indonesia and Malaysia. *Cogent Business & Management*, 7(1), 1804181.
- Ajzen, I. (1991). The theory of planned behavior. *Organizational behavior and human decision processes*, 50(2), 179-211
- Alkhowaiter, W. A. (2020). Digital payment and banking adoption research in Gulf countries: A systematic literature review. *International Journal of Information Management*, 53, 102102.
- Al-Nawayseh, M. K. (2020). Fintech in COVID-19 and beyond: what factors are affecting customers' choice of fintech applications?. *Journal of Open Innovation: Technology, Market, and Complexity*, 6(4), 153.
- Alswaigh, N. Y., & Aloud, M. E. (2021). Factors Affecting User Adoption of E-Payment Services Available in Mobile Wallets in Saudi Arabia. *International Journal of Computer Science & Network Security*, 21(6), 222-230.
- Arner, D. W., Barberis, J., & Buckley, R. P. (2015). The evolution of Fintech: A new post-crisis paradigm. *Geo. J. Int'l L.*, 47, 1271.
- Aseng, A. C. (2020). Factors Influencing Generation Z Intention in Using FinTech Digital Payment Services. *CogITo Smart Journal*, 6(2), 155-166.
- Black, N. J., Lockett, A., Ennew, C., Winklhofer, H., & McKechnie, S. (2002). Modelling consumer choice of distribution channels: an illustration from financial services. *International Journal of Bank Marketing*.
- Chawla, D., & Joshi, H. (2019). Consumer attitude and intention to adopt mobile wallet in India—An empirical study. *International Journal of Bank Marketing*.
- Chuang, L. M., Liu, C. C., & Kao, H. K. (2016). The adoption of fintech service: TAM perspective. *International Journal of Management and Administrative Sciences*, 3(7), 1-15.
- D. Chawla and H. Joshi, "The moderating role of gender and age in the adoption of mobile wallet," *Foresight*, vol. 22, no. 4, 483–504, 2020.
- Daragmeh, A., Lentner, C., & Sági, J. (2021). FinTech payments in the era of COVID-19: Factors influencing behavioral intentions of "Generation X" in Hungary to use mobile payment. *Journal of Behavioral and Experimental Finance*, 32, 100574.
- Das, A., & Das, D. (2020). Perception, adoption, and pattern of usage of FinTech services by bank customers: Evidences from Hojai District of Assam. *Emerging Economy Studies*, 6(1), 7-22.
- Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer technology: A comparison of two theoretical models. *Management science*, 35(8), 982-1003
- de Luna, I. R., Liébana-Cabanillas, F., Sánchez-Fernández, J., & Muñoz-Leiva, F. (2019). Mobile payment is not all the same: The adoption of mobile payment systems depending on the technology applied. *Technological Forecasting and Social Change*, 146, 931-944.
- Durr, M. (2020). World Health Organization says cash may contribute to spread of coronavirus, promotes paperless spending
- EY. (2019). *Global FinTech Adoption Index 2019*, 44. Retrieved from [https://assets.ey.com/content/dam/ey-sites/ey-com/en\\_gl/topics/banking-and-capital-markets/ey-global-fintech-adoption-index.pdf](https://assets.ey.com/content/dam/ey-sites/ey-com/en_gl/topics/banking-and-capital-markets/ey-global-fintech-adoption-index.pdf)
- Fernandez-Vazquez, S., Rosillo, R., De La Fuente, D., & Priore, P. (2019). Blockchain in FinTech: A mapping study. *Sustainability*, 11(22), 6366.
- Financial Stability Board. (2019). FinTech and market structure in financial services: Market developments and potential financial stability implications. Retrieved from: <https://www.fsb.org/wp-content/uploads/P140219.pdf>.
- Flavián, C., & Guinalú, M. (2006). Consumer trust, perceived security and privacy policy: three basic elements of loyalty to a web site. *Industrial management & data Systems*.
- Freedman, R. S. (2006). Introduction to financial technology. Elsevier.
- Gai, K., Qiu, M., & Sun, X. (2018). A survey on FinTech. *Journal of Network and Computer Applications*, 103, 262-273.
- Grima, S., & Thalassinos, E. I. (2020). *Financial derivatives: A blessing or a curse?*. Emerald Group Publishing.
- Grima, S., & Thalassinos, E. I. (2020). *Financial derivatives: A blessing or a curse?*. Emerald Group Publishing.
- Gupta, K., & Arora, N. (2019). Investigating consumer intention to accept mobile payment systems through unified theory of acceptance model: An Indian perspective. *South Asian Journal of Business Studies*.
- Ha Nam Khanh, G., & Chau, T. K. (2020). Nhân tố ảnh hưởng đến quyết định sử dụng dịch vụ smartbanking-Nghiên cứu thực nghiệm tại BIDV-Chi nhánh Bắc Sài gòn (The Factors Affect on the Decision of Using Smart Banking Service at Bank of Investment and Development of Viet Nam-North Saigon Branch). *Tạp chí Khoa học & Đào tạo Ngân hàng-Số*.
- Hsu, C. L., & Lu, H. P. (2004). Why do people play on-line games? An extended TAM with social influences and flow experience. *Information & management*, 41(7), 853-868.
- Huang, J., Maassen van den Brink, H., & Groot, W. (2012). Does education promote social capital? Evidence from IV analysis and nonparametric-bound analysis. *Empirical Economics*, 42(3), 1011-1034.
- Kang, J. (2018). Mobile payment in Fintech environment: trends, security challenges, and services. *Human-centric Computing and Information sciences*, 8(1), 1-16.
- Khatun, N., & Tamanna, M. (2020). Factors affecting the adoption of Fintech: a study based on the financial institutions in Bangladesh. *Copernican Journal of Finance & Accounting*, 9(4), 51-75.
- Kim, E. J., Kim, J. H., & Kim, J. W. (2017). A Study of the Factors Influencing on the Intention to Use Fintech. *The Journal of Information Systems*, 26(1), 75-91.
- Kim, G., Shin, B., & Lee, H. G. (2009). Understanding dynamics between initial trust and usage intentions of mobile banking. *Information Systems Journal*, 19(3), 283-311

- Kim, H. B., Choi, S., Kim, B., & Pop-Eleches, C. (2018). The role of education interventions in improving economic rationality. *Science*, 362(6410), 83-86.
- Lee, D. K. C., & Teo, E. G. (2015). Emergence of FinTech and the LASIC Principles. *Journal of Financial Perspectives*, 3(3).
- Lee, T. H., & Kim, H. W. (2015, August). An exploratory study on fintech industry in Korea: crowdfunding case. In Proceedings in *International Conference on Innovative Engineering Technologies*, Bangkok, August (pp. 7-8).
- Liébana-Cabanillas, F., Marinkovic, V., de Luna, I. R., & Kalinic, Z. (2018). Predicting the determinants of mobile payment acceptance: A hybrid SEM-neural network approach. *Technological Forecasting and Social Change*, 129, 117-130.
- Liébana-Cabanillas, F., Muñoz-Leiva, F., & Sánchez-Fernández, J. (2018). A global approach to the analysis of user behavior in mobile payment systems in the new electronic environment. *Service Business*, 12(1), 25-64.
- Liébana-Cabanillas, F., Ramos de Luna, I., & Montoro-Ríos, F. J. (2015). User behaviour in QR mobile payment system: the QR Payment Acceptance Model. *Technology Analysis & Strategic Management*, 27(9), 1031-1049.
- Liébana-Cabanillas, F., Sánchez-Fernández, J., & Muñoz-Leiva, F. (2014). Antecedents of the adoption of the new mobile payment systems: The moderating effect of age. *Computers in Human Behavior*, 35, 464-478.
- Lien, N. T. K., Doan, T. T. T., & Bui, T. N. (2020). Fintech and banking: Evidence from Vietnam. *The Journal of Asian Finance, Economics, and Business*, 7(9), 419-426
- Lu, H. P., & Lee, M. R. (2012). Experience differences and continuance intention of blog sharing. *Behaviour & Information Technology*, 31(11), 1081-1095.
- Mallat, N. (2007). Exploring consumer adoption of mobile payments – A qualitative study. *The Journal of Strategic Information Systems*, 16(4), 413-432.
- Moorthy, K., Chun T'ing, L., Chea Yee, K., Wen Huey, A., Joe In, L., Chyi Feng, P., & Jia Yi, T. (2020). What drives the adoption of mobile payment? A Malaysian perspective. *International Journal of Finance & Economics*, 25(3), 349-364.
- Muñoz Leiva, F. (2008). La adopción de una innovación basada en la Web. Análisis y modelización de los mecanismos generadores de confianza.
- N. Singh and N. Sinha, "How perceived trust mediates merchant's intention to use a mobile wallet technology," *Journal of Retailing and Consumer Services*. ser v, vol. 52, no. March, p. 101894, 2020
- Oliveira, T., Thomas, M., Baptista, G., & Campos, F. (2016). Mobile payment: Understanding the determinants of customer adoption and intention to recommend the technology. *Computers in Human Behavior*, 61, 404-414
- Pavlou, P. A. (2002). A theory of planned behavior perspective to the consumer adoption of electronic commerce. *MIS Quarterly*, 30(1), 115-143.
- Ramos, F. A. B. (2017). Accessing the determinants of behavioral intention to adopt fintech services among the millennial generation.
- Rogers, E. M. (2010). Diffusion of Innovations (4th ed.). *New York, NY: The Free Press*
- Sfenrianto, S., Junadi, J., & Saragih, M. H. (2017, November). The analysis of consumer's intention model for using E-payment system in Indonesia. In *2017 International Conference on Sustainable Information Engineering and Technology (SIET)* (pp. 78-82). IEEE.
- Shin, D. H. (2010). Modeling the interaction of users and mobile payment system: Conceptual framework. *International journal of human-computer interaction*, 26(10), 917-940.
- Singh, A. (2016). The future of mobile wallets in India. *The Hindu Business Line*, 10.
- Solarz, M., & Swacha-Lech, M. (2021). Swacha-Lech, M., & Solarz, M. (2021). Determinants of the Adoption of Innovative Fintech Services by Millennials. *E & M Ekonomie a Management*, 24(3).
- Sorensen, E. (2018). Different types of mobile payments explained. *Mobile Transaction Retrieved from <https://www.mobiletransaction.org/different-types-of-mobile-payments/> Statista.*
- Sreelakshmi, C. C., & Prathap, S. K. (2020). Continuance adoption of mobile-based payments in Covid-19 context: an integrated framework of health belief model and expectation confirmation model. *International Journal of Pervasive Computing and Communications*.
- Statista Research Department (2022). Fintech in Australia - statistics & facts. Retrieved from [https://www.statista.com/topics/5580/fintech-in-australia/#topicHeader\\_\\_wrapper](https://www.statista.com/topics/5580/fintech-in-australia/#topicHeader__wrapper)
- Swacha-Lech, M., & Solarz, M. (2021). Determinants of the Adoption of Innovative Fintech Services by Millennials. *E & M Ekonomie a Management*, 24(3).
- Szopiński, T. S. (2016). Factors affecting the adoption of online banking in Poland. *Journal of business research*, 69(11), 4763-4768.
- Tan, M., & Teo, T. S. (2000). Factors influencing the adoption of Internet banking. *Journal of the Association for Information Systems*, 1(1), 5.
- Taylor, S., & Todd, P. A. (1995). Understanding information technology usage: A test of competing models. *Information systems research*, 6(2), 144-176.
- Thakur, R., & Srivastava, M. (2014). Adoption readiness, personal innovativeness, perceived risk and usage intention across customer groups for mobile payment services in India. *Internet Research*.
- Tùng, H. (2019). FinTech-Làn sóng công nghệ trong lĩnh vực tài chính-ngân hàng. *Tạp chí Khoa học và Công nghệ Việt Nam*, (1+ 2A), 25.
- Upadhyay, P., & Chattopadhyay, M. (2015). Examining mobile based payment services adoption issues: A new approach using hierarchical clustering and self-organizing maps. *Journal of Enterprise Information Management*.
- Varga, D. (2017). Fintech, the new era of financial services. *Vezetéstudomány-Budapest Management Review*, 48(11), 22-32.
- Venkatesh, V., & Bala, H. (2008). Technology acceptance model 3 and a research agenda on interventions. *Decision sciences*, 39(2), 273-315.
- Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management science*, 46(2), 186-204.

- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 425-478.
- Venkatesh, V., Thong, J. Y., & Xu, X. (2012). Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. *MIS Quarterly*, 36(1), 157-178
- Yu, C. S. (2012). Factors affecting individuals to adopt mobile banking: Empirical evidence from the UTAUT model. *Journal of electronic commerce research*, 13(2), 104.
- Zhou, T., Lu, Y., & Wang, B. (2010). Integrating TTF and UTAUT to explain mobile banking user adoption. *Computers in human behavior*, 26(4), 760-767.

Nguyen Thi Hoai Phuong, PhD  
School of Banking and Finance  
National Economics University, 207 Giai Phong, Hai Ba Trung, Hanoi, Vietnam  
Email: Phuongnh@neu.edu.vn

Nguyen Dieu Thuy  
School of Advanced Education Programs  
National Economics University, 207 Giai Phong, Hai Ba Trung, Hanoi, Vietnam  
Email: Dieuthuydck@gmail.com

Tran Linh Giang  
School of Advanced Education Programs  
National Economics University, 207 Giai Phong, Hai Ba Trung, Hanoi, Vietnam  
Email: Tranlinhgiang0411@gmail.com

Bui Thi Ngoc Han  
School of Advanced Education Programs  
National Economics University, 207 Giai Phong, Hai Ba Trung, Hanoi, Vietnam  
Email: Ngochan050801@gmail.com

Tieu Hoang Hieu  
School of Advanced Education Programs  
National Economics University, 207 Giai Phong, Hai Ba Trung, Hanoi, Vietnam  
Email: Mrhieu258@gmail.com

Nguyen Tan Long  
School of Advanced Education Programs  
National Economics University, 207 Giai Phong, Hai Ba Trung, Hanoi, Vietnam  
Email: Tanlong2511@gmail.com