





## Article

# Factors Affecting the Intention to Use Financial Technology among Vietnamese Youth: Research in the Time of COVID-19 and Beyond

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**Abstract:** This study focuses on understanding the factors that affect the intention of using financial technology among young Vietnamese in the context of the COVID-19 pandemic. Fintech studies are abundant in developed countries and mainly focus on consumers' conditions, awareness, habits, and capital. These are expected to differ significantly from the situation in developing countries. We have reviewed factors that can affect the user's intention, including the Perceived Benefit (PB), Perceived Risk (PR), Belief (B), and Social Influence (SI), and rely on the Technology Acceptance Model (TAM) and the Theory of Reasoned Action (TRA) model in this research. The survey sample comprises 161 Z-generation consumers with strong flexibility and knowledge about the use of Fintech. We use the PLS-SEM (partial least squares structural equation modeling) analysis method with the SmartPLS software (SmartPLS GmbH, Oststeinbek, Germany) to evaluate the research model. We find that the Perceived Benefit (PB) has the most significant impact on the intention to use Fintech, followed by Belief (B). However, in general, the factors are not significant, perhaps due to many reasons that are intrinsic in Vietnam. Based on this result, service providers, policymakers, and researchers can calibrate the development and research for the following stages. We offer findings different from the previous research, thus especially extending the literature on young people.

**Keywords:** financial technology; TAM model; TRA model; COVID-19



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## 1. Introduction

Financial technology (Fintech) is a term that has been present since the 1990s. In recent years, this term has been increasingly popular because of the robust development of Fintech across the globe. Fintech is meant to shape the future of the financial industry (Lee and Teo 2015). The Fintech ecosystem consists of innovation in core services, business infrastructure, and components and creates a valuable additional mechanism through collaboration by redesigning, nesting, re-functioning, and redirecting financial services between important market stakeholders (Estrin et al. 2018). Fintech is expected to provide new added value and services at a lower cost than traditional technology. The Fintech revolution has been set to affect the incumbent financial service activities by increasing their efficiency, customer-centric character, and transparency (Gomber et al. 2018). Loo believes that if they are freely competitive, Fintech can increase consumer benefits and lower the probability of a financial crisis (Van Loo 2018). However, because this is a very

young industry, it is subject to competition from traditional financial services, and the pressure from gaining the users' acceptance is enormous. Moreover, consumers can face some disadvantages in the application of Fintech products, including the risk of financial losses and privacy concerns (Liébana-Cabanillas et al. 2014).

The intention to use Fintech services is affected by customers' perception of risk: financial risks, legal risks, and activity risks have significant influences, while security risk does not impose any significant impact on the intention to use Fintech (Tang et al. 2020). Another study explores the use of smartphone applications to manage the financing of fishers (Carlin et al. 2017). This research shows that men tend to be more able to adopt new technology than women. Finally, using survey data collected from 244 Fintech users, Hyun-Sun Ryu (Ryu 2018) finds that legal risks have the most significant negative impact, while convenience has the most positive influence on the intention to use Fintech.

In Vietnam, there are few Fintech studies, such as the research on the development of Fintech by Dang Thi Ngoc Lan (Dang) and the study on the factors affecting the choice to continue using Fintech Payment Services among university students by Nguyen Dang Tue (Nguyen 2020).

This study seeks to extend extant studies on several fronts. First, the study analyzes both aspects of benefits and risks in order to offer a more holistic view. Second, the study was conducted in Vietnam, which shows excellent potential for Fintech's development. Vietnam is in a booming period, with nearly 55% of the total population using smartphones and 52% using the Internet. This makes Vietnam the land of promise for Fintech. In fact, there has been a marked increase in the number of Fintech companies, from about 40 companies at the end of 2016 to nearly 150 companies by the end of 2019. The recent COVID-19 pandemic has further encouraged the development of electronic payment. However, the development of Fintech in Vietnam also carries many security threats as Fintech's legal corridor is still in its early stages in this country (Lien et al. 2020). Therefore, exploring the factors affecting awareness and user intentions is absolutely necessary. This study will examine the factors that affect the decision to use financial technology products, especially in the context of the COVID-19 pandemic (Al-Nawayseh 2020). The conditions, awareness, and habits of people as well as other factors regarding Fintech differ between developed and developing markets (Lehmann 2020). As a result, studies in developed countries might not be relevant to Vietnam. The present study will contribute to a broader view of this topic. Third, we use Model TAM and TRA, with results different from the previous research. We also focus on the survey subjects: the Z generation of consumers, who are aged 18–24. They are information consumers and providers who are very good at device skills (Csobanka 2016).

This research contributes to discovering the effects of factors on the access and usage of Fintech users in Vietnam, especially for young people in the COVID-19 period. At the same time, solutions are also provided. Introduced to overcome existing limitations that users of Fintech encounter, companies operating in Vietnam can refer to results presented in this study to improve their services. The study also shows differences in Fintech usage habits and behavior in developing countries when compared to foreign studies.

The article proceeds as follows. Section 2 provides an overview of the Vietnamese research setting. Section 3 provides a discussion of the literature review and formulates hypotheses. The models, estimation methods, and data collection are presented in Section 4. In Section 5, we discuss our findings, followed by conclusions and some recommendations in Section 6.

## 2. Background in Vietnam

### *Context*

The Vietnamese economy rebounded in the first quarter of 2021 with a GDP (Gross Domestic Product) growth of 4.48%. The increase is still lower than that in 2018 (7.45%), but it has shown signs of recovery compared to 2020. According to the Vietnam Startup Report in Q1 2021 (Vietnam Fintech Report 2020 2020), Fintech showcases a really impressive

performance. In recent years, the number of Fintech companies has increased rapidly in the Vietnamese market and plays a more critical role in the COVID-19 pandemic that hinders traditional financial activities.

Fintech is a potential industry in digital transformation that reduces costs and increases utility for users. In 2020, the Fintech sectors thrived in Payments (accounting for 33% of market share), P2P Lending (15.5%), Blockchain/Crypto (13%), and POS (Point of Sale) and Wealth Management (7%). The users' habit of using traditional financial services is gradually changing as the number of Fintech users is growing, especially with the rise in the number of young users.

Payment is a high potential field, and this is quite understandable because payment activity is essential in everyday life. E-commerce or service providers have seized every opportunity to take part in the trend. Grab bought shares of the startup Moca, a Vietnamese mobile payment application. VinID also acquired Monpay, a payment application. Lazada Vietnam integrated Emonkey into their platforms.

According to *Fintech and Digital Banking 2025 Asia Pacific 2020 (2020)*, mobile transactions in Vietnam are expected to increase by 400% in the period of 2020–2025, and the number of bank accounts is expected to increase further by about 50% for the top eight leading banks. The rapid increase in accounts and transactions imposes a large pressure on the current banking system. According to this report, the average life expectancy of the core banking system among the top 100 banks in the Asia Pacific region is still at 17.5 years, and this means it would be challenging to respond to the needs of the digital era. Banks in Vietnam are actively converting to modern digital platforms, but it is expected that only about 25% of banks in Vietnam will have been converted by 2025.

According to Vietnam Fintech Report statistics for 2020, 69% of Vietnamese people have savings accounts in banks, 45% of the people have smartphones, and 57% have internet on their phones. These indicators are expected to increase rapidly in the coming years, serving as the necessary conditions for customers to access and effectively use Fintech services quickly.

In addition to the advantages of the demographic characteristics, Fintech companies also have advantages from government support and foreign investment. The State Bank has planned to allow banks and Fintech companies to participate in Sandbox starting in 2022, for a period of 1–2 years. The areas include: payment, credit, P2P lending, customer identification, application programming interface, tech-based solution, and other banking support services. In the future, foreign investment capital pouring into this industry is expected to increase significantly. At the same time, the relationship between commercial banks and Fintech companies will become increasingly tighter to suit the diverse needs of customers.

The competition between the banking system and Fintech companies has been robust, requiring companies to evolve constantly in order to capture customers' needs and improve service quality to retain customers, attract new customers, and expand market share. Therefore, studies on factors that may affect the intention to use Fintech in Vietnam could have practical implications for Fintech firms.

### 3. Theoretical Framework and Hypothesis Development

Since the term "Fintech" appeared, there have been quite a few studies about it around the world. In particular, the adoption of Fintech services has been studied by many scholars, such as the study on how perceived risk factors affect the intention to use Fintech (Tang et al. 2020). This study is expected to close the perceived risk factors of Fintech. Researchers surveyed 302 people, most of them young and middle-aged, with only 55 (18.2%) of the respondents being over 45 years old. It can be said that this research is based on young people who have a good ability to absorb and use technology. The results show that out of the four risks, three—financial risk, legal risk, and operational risk—have a significant influence, while security risk has no significant negative impact on the intention to use Fintech. However, the research has many limitations when focusing only

on perceived risk. In addition, there is a study on the adoption of Fintech services through the generation group of (Carlin et al. 2017). This research exploits the advent of smartphone apps for personal financial management as an exogenous source of transformation. In this study, in addition to the benefits that Fintech brings, people also point out some risks when using financial technology products. The research also shows that a higher proportion of men tend to adopt new technologies and access information, and the impact of their access on the economy is greater than that of women. Research by (Hyun-Sun Ryu 2018) on the framework of benefits and risks of Fintech adoption includes a comparison between adopters and early adopters (Ryu 2018). The research, with the aim of answering the question: “Why are users willing or hesitant to apply Fintech?”, was performed by collecting data from 244 Fintech users. The study investigates the perceived benefits and risks that have a significant impact on Fintech adoption. In addition, the study also examines the effects of perceived benefits and risks when applying Fintech to each type of person. The results show that: Legal risk has the biggest negative impact, while convenience has the most positive influence on the intention to use Fintech.

In Vietnam, there is some research on Fintech, such as the research on the development of Fintech and movements in the field of Finance/Banking by Dr. Dang Thi Ngoc Lan, or research on factors affecting the continuous usage of Fintech payment services—a study on university students in Vietnam by Nguyen Dang Tue. In general, there is still no research on the factors affecting the intention to use Fintech. Therefore, this study may respond to and complement previous studies.

### 3.1. Theory of Reasoned Action (TRA)

Theory of Reasoned Action (TRA) was developed by two psychologists, Martin Fishbein and Icek Ajzen. The theory suggests that the intention to behave impacts someone’s behavior: the intention leads to the occurrence of behavior. Attitudes will include many different types, such as positive, negative, or neutral. A behavior with a positive attitude is supposed to lead to a favorable result (Ajzen and Fishbein 1975).

### 3.2. Technology Acceptance Model (TAM)

Fintech is the result of the creative application of technology in finance and banks to improve services. With the goal of predicting the acceptance of a tool and identifying the modifications that need to be included in the system to make the user accept it, the TAM (Davis 1985) perfectly explains the meaning of acceptance of a new technology.

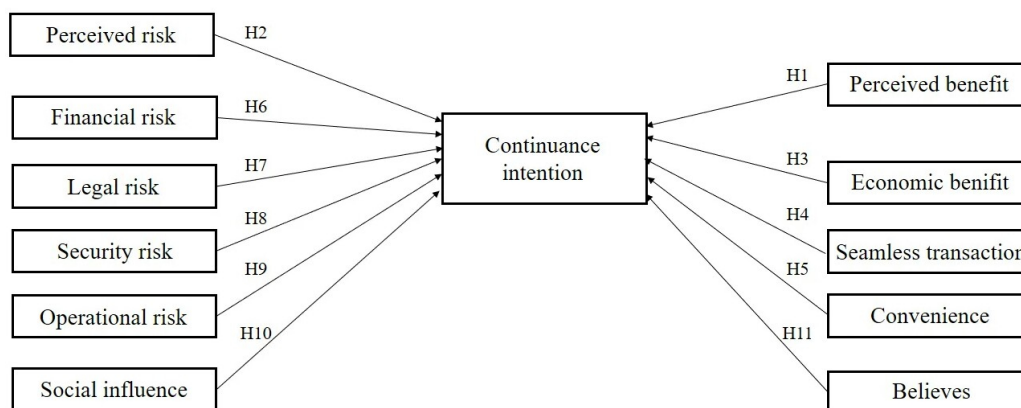
The TAM model shows that acceptance of an information system depends on the usefulness perception and ease of use. According to Davis, usefulness perception and ease of use affect users’ attitudes, thereby affecting the intention to use (Davis 1985). This model has been widely used in many studies on the application of advanced technology to life such as in social networks, digital libraries (Chen et al. 2016), online banking, and mobile banking (Patel and Patel 2018).

## Hypothesis Development

This study proposes a benefit and risk framework by integrating positive and negative factors related to the intention to use Fintech. Previous studies have applied multi-behavioral belief structures to determine the overall benefits and risks. Three key elements of perception have been discussed: economic benefits, seamless transactions, and convenience. Additionally, there are four main factors of risks: financial risks, legal risks, security risks, and operational risks. Therefore, this study assumes that positive and negative factors affect the perceived benefits and risk, significantly affecting the intention to continue using Fintech. The proposed model is summarized in Figure 1.

In this research model, the perceived benefits are defined as “user perception about the benefits of using Fintech”. Perceived benefit is how users believe that using technology will improve efficiency (David 1989). Perceived benefit has a positive impact on the use of products and services (Peter and Tarpey 1975), the use of mobile payment (Liu et al.

2012), the use of Bitcoin (Abramova and Böhme 2016), online shopping (Batara et al. 2018), and the intention to use Internet Banking. Scientists have not agreed on the definition of perceived risk. Perceived risk has a negative impact on the intention to use Fintech (Ryu 2018). Rich defines perceived risk as akin to the uncertainty of whether a person will win or lose the bet amount (Rich and Cox 2014).



**Figure 1.** Research framework. H1-H10 are the hypotheses presented below. Source: Proposal from the author.

Therefore, perceived risk is defined as bad impressions when using Fintech. We suggest the following hypotheses:

**Hypothesis 1:** *Perceived benefit positively impacts intention to continue using Fintech.*

**Hypothesis 2:** *Perceived risk negatively impacts intention to continue using Fintech.*

The economic benefit includes cost reduction and increased profit from Fintech transactions, which are the motivation behind the consumers' intention to continue. According to Mackenzie (Mackenzie 2015), Fintech's mobile transfer or P2P loan may lower costs for users compared to traditional financial service providers. The online shopping research model of Liu (Forsythe et al. 2006) proposed four perceived benefits (convenience, ease, enjoyment, product selection) and three perceived risks (talent risk main, product risk, time risk). According to Zavolokina et al. (2016), seamless transactions help customers to obtain immediate benefits with easy to relate to and customer-friendly financial services platforms.

**Hypothesis 3:** *Economic benefit positively impacts the intention to continue using Fintech.*

**Hypothesis 4:** *Seamless transaction positively impacts the intention to continue using Fintech.*

**Hypothesis 5:** *Convenience positively impacts the intention to continue using Fintech.*

This study shows four risks in the context of Fintech: financial risk, legal risk, security risk, and operational risk. Derbaix defined perceived risk as the "potential net loss of money" (Derbaix 1983). Financial risk is the potential loss due to trading errors and misused bank accounts (Lee 2009). According to Kuisma et al. (2007), many customers are afraid of losing money when making transactions and transferring money over the Internet. The research by Maignan and Lukas indicates that legal risk is a perception of insecurity related to online credit cards (Maignan and Lukas 1997). Consumers perceive the security risk inherently when using Fintech (Schierz et al. 2010). Fraud and hackers' intrusion lead to users' loss and violate user privacy. Consumers said that their information could be easily stolen using online banking services (Littler and Melanthiou 2006). Operational risk



refers to losses due to shortcomings or malfunctions of online shopping sites. In addition, customers fear the possibility of the Internet connection server causing losses (Kuisma et al. 2007). Six perceived risks are financial risk, risk of performance, social risks, physical risks, security risk, and time loss (Jacoby and Kaplan 1972; Kaplan et al. 1974).

**Hypothesis 6:** *Financial risk negatively affects the intention to continue using Fintech.*

**Hypothesis 7:** *Legal risk negatively affects the intention to continue using Fintech.*

**Hypothesis 8:** *Security risk negatively affects the intention to continue using Fintech.*

**Hypothesis 9:** *Operational risk negatively affects the intention to continue using Fintech.*

Social influence is the effect of others within a personal invitation system (Chuang et al. 2016) and the perception of the subjective culture of the reference group (Oliveira et al. 2016), showing that social influence has a significant effect on behavioral intentions to use mobile payment technology in Portugal. Their research asserts that social influence will affect the intention to utilize mobile payment because individuals are easily affected by other people (Oliveira et al. 2016).

**Hypothesis 10:** *Social influence positively impacts the intention to continue using Fintech.*

According to the research by Ali, beliefs strongly affect the intention to use online banking (Omar Ali et al. 2020). Beliefs are a significant component contributing to online banking applications and the integrity of the information technology group that they manage (Chandio et al. 2013).

According to Liébana-Cabanillas et al. (2018) and Oliveira et al. (2016), the critical factor in information technology deployment is the innovation of individuals. Liébana-Cabanillas found a positive and significant relationship between the renewal of the individual and the intention to apply the user's new technology (Liébana-Cabanillas et al. 2018). The innovation of individuals is defined as an individual's readiness to accept new things and use new information technology beyond traditional methods (Agarwal et al. 1998). The innovation of individuals helps reduce their anxiety, producing a positive impact on the acceptance of technology. In contrast to early accepting consumers, late adopters are supposed to accept products in the mature stage and the decline in the life cycle of the product. Rogers and Everett soon accepted innovative technologies even without certainty with its benefits (Rogers 1995). Therefore, this study proposed the following hypothesis.

**Hypothesis 11:** *Beliefs positively impact the intention to continue using Fintech.*

## 4. Research Design

### 4.1. Scale and Structure of the Questionnaire

We divide the questionnaire content into 12 parts, which include: Demographics, Perceived Benefit (PB), Economic Benefit (EB), Seamless Transaction (ST), Convenience (CV), Perceived Risk (PR), Financial Risk (FR), Legal Risk (LR), Security Risk (SR), Operational Risk (OR), Social Influence (SI), Beliefs (B), and Continuance Intention (CI). The above concepts were selected from related studies. In particular, Perceived Risk is from Benlian and Hess (2011), Kim et al. (2008); the Economic Benefit concept and Financial Risk are from Featherman and Pavlou (2003), Lee (2009); Chishti's Seamless Transaction concept is from Chishti (2016); the Convenience concept is from Okazaki and Mendez (2013); the concept of Operational Risk is from Barakat and Hussainey (2013); the Social Influence concept is from Ajzen (1991), Chatterjee (2008), Venkatesh et al. (2003); the Beliefs concept is from Chatterjee (2008), Venkatesh et al. (2003); and the concept of Continuance Intention is from Cheng et al. (2006), Lee (2009).

## 4.2. Methodology

Quantitative research methods were used in the deductible process (Nguyễn 2012). We used a quantitative survey method to achieve the main research objectives.

A system of concept/scale and observed variables were synthesized and selected from previous studies to match the research objectives, but there was no change in the scale of original concepts. Variables were measured using a Likert scale with five levels: (1) completely disagree; (2) disagree; (3) neutral; (4) agree; (5) completely agree. We used an SPSS 20.0 (International Business Machines Corporation, New York, NY, USA) and Smart PLS software (GmbH, Oststeinbek, Germany) to conduct reliability, correlation, factor, regression, and hypothetical testing.

The PLS\_SEM model (Structural Equation Modeling) is one of the complex techniques used to analyze complex relationships in the causal model. This is a widely used model in research areas, especially in customer satisfaction model research. The SEM model coordinates the techniques for multivariate regression, factor analysis, and mutual relationship between elements in the diagram to check the complex relationship in the model.

This study adopted two models: the measurement model and the structural model. Measurement models (also called factor models) deal with potential variables through indicators such as the reliability of observation variables, determined via Cronbach's Alpha. The structural model is a model that identifies links between potential variables. These relationships can describe the theoretical forecasts that researchers are interested in. The model used an estimated method, with the multiple regression of the observed variables.

In addition, to ensure the highest robustness and accuracy for the model, we estimated the model with the Bootstrap method. Bootstrap is a quantitative research method performed by sampling. The study sample was divided into two sub-samples: one sample was used to estimate the parameters and the other was used to reevaluate the estimated results. The estimated results, after implementing the bootstrap with the number of N times of repetition, was subsequently averaged. If this value was close to the overall estimate, the model estimates could then be trusted.

## 4.3. Samples and Ways of Collecting Samples

### 4.3.1. Overall Research

We collected data to satisfy the purpose of the research scope (Nguyễn 2012). The research sample comprised people living, studying, and working in Ho Chi Minh City.

### 4.3.2. Sampling Method

Research focusing on young people show that they are more compatible with technology products and prefer to use services than previous generations (Vietnam Fintech Report 2020 2020). Therefore, this study focused on this group of subjects. Data were collected by random sampling. The majority of the survey subjects were young people aged 18–24, who were using or had never used Fintech in payment. Due to the limited space and time, the survey was conducted through the sending of forms via email, and the main targets were the students in school and their friends. This resulted in 223 votes, which satisfied the minimum number of observations. The representativeness of the sample was evenly distributed and was shown by the diversity in the responses of the respondents.

Among the 223 answers, there were 161 valid responses. When using PLS\_SEM, the sample size needs to be 10 times the number of paths in the structure model (Hair et al. 2016). There were 11 paths, so the minimum number of observations was 110. In addition, the PLS SEM method is a suitable model with a small sample size, at least 80, so the sample size for the study was considered appropriate. The responses of the respondents have a high diversity. The observations were evenly distributed, thus ensuring the representativeness of the sample. All valid observations were processed using an SPSS 23.0 software and a SmartPLS 3.2.8 software to conduct a reliability analysis, factor analysis, regression analysis, and the testing of hypotheses.

## 5. Results and Discussion

### 5.1. Descriptive Statistics

#### 5.1.1. Demographics

The research was officially conducted from 11 November 2020 to 31 January 2021. The survey questionnaire used in the formal study employed closed questions, measuring the road by scale, namely the 5-level Likert scale.

The surveyed objects included young people, mainly students and workers living in Vietnam. More specifically, the number of people who were using Fintech was 161 (accounting for 72.85%), while 56 people never used Fintech (accounting for 25.34%), and 4 people had used Fintech but were currently not using it (accounting for 1.81%). Thus, the sample size used in the research was 161. Information about the research sample is introduced in Table 1.

Table 1 presents a descriptive statistical result for demographic variables. The study model has many young people (aged 18–24) participating in the most extensive survey, and who account for 98.1%. This result is due to the fact that most of the survey questionnaires were sent to students and young people who quickly change their behavior and awareness of new technology. At the same time, most surveyed subjects were in Ho Chi Minh City (accounting for 92.5%).

**Table 1.** Statistical results describing demographic variables.

Living Area		
	Quantity	Percentage
Ho Chi Minh City	149	92.5%
Others	12	7.5%
Total	161	100%
Age		
18–24	158	98.1%
25–34	2	1.2%
35–39	0	0.0%
Over 39	1	0.6%
Total	161	100%

#### 5.1.2. Check Measurement

Table 2 presents the results of the internal stability assessment of each factor, showing that almost all observed variables have an acceptable reliability. The Cronbach's Alpha coefficient of each factor containing observed variables has a high level ( $>0.7$ ). However, the variables observed—B6, FR2, LR1, and PR3—had the reliability coefficient of 0.457, 0.239, 0.276, and 0.110, respectively, lower than the threshold of 0.5. Therefore, in this study, the B6, FR2, LR1, and PR3 variables were considered from the model.

#### Check the First Measurement Model

The results of the AVE (Average Variance Extracted) show values after checking the measurement model for the first time. The results show that all factors have an AVE  $> 0.5$ , including factors with a high AVE index such as CV (0.786), SI (0.795), and SR (0.743). Some factors have lower AVE indexes, such as B (0.609), FR (0.547), LR (0.623), and PR (0.551). These are factors containing variables considered in the type of model in Section 1, and the load factor values and the trust factor of the observation variables are not standard. Therefore, the above variables are removed from the model to perform the second measurement model test.



### Check the Second Measurement Model

The AVE results shown are for the B6, LR1, FR2, and PR3 variables. The results show that the AVE values are larger than 0.5. The factor groups have a better AVE index. Except for the B factors, all the remaining factors are greater than 0.7.

### Conclusion

Results of the measurement model inspection, internal stability tests, and the convergence values of factors in the measurement model are presented in Table 2 below.

**Table 2.** Results of the measurement model inspection.

Latent Variable	Observed Variables	Convergent Validity			Internal Stability		Discriminant Validity
		Factor Loading	Outer Loadings	AVE	Composite Reliability	Cronbach's Alpha	
		>0.7	>0.5	>0.5	0.6–0.95	0.6–0.95	
B	B1	0.836	0.699	0.656	0.919	0.896	Yes
	B2	0.858	0.735				
	B3	0.838	0.702				
	B4	0.789	0.623				
	B5	0.802	0.643				
	B7	0.731	0.534				
CI	CI1	0.84	0.705	0.714	0.909	0.866	Yes
	CI2	0.871	0.758				
	CI3	0.839	0.703				
	CI4	0.829	0.688				
CV	CV1	0.902	0.814	0.786	0.917	0.864	Yes
	CV2	0.856	0.733				
	CV3	0.900	0.810				
EB	EB1	0.850	0.723	0.715	0.883	0.803	Yes
	EB2	0.826	0.682				
	EB3	0.860	0.740				
FR	FR1	0.930	0.865	0.780	0.876	0.727	Yes
	FR3	0.833	0.694				
LR	LR2	0.889	0.790	0.765	0.907	0.854	Yes
	LR3	0.793	0.629				
	LR4	0.935	0.875				
OR	OR1	0.768	0.590	0.701	0.875	0.793	Yes
	OR2	0.824	0.679				
	OR3	0.913	0.834				
PB	PB1	0.825	0.681	0.696	0.901	0.854	Yes
	PB2	0.858	0.736				
	PB3	0.860	0.740				
	PB4	0.791	0.626				
PR	PR1	0.954	0.911	0.782	0.877	0.747	Yes
	PR2	0.808	0.653				
SI	SI1	0.869	0.775	0.795	0.921	0.871	Yes
	SI2	0.918	0.843				
	SI3	0.887	0.788				
SR	SR1	0.903	0.815	0.742	0.895	0.842	Yes
	SR2	0.716	0.513				
	SR3	0.948	0.899				
ST	ST1	0.870	0.756	0.712	0.881	0.797	Yes
	ST2	0.813	0.661				
	ST3	0.847	0.717				

### Discriminant Validity

The results of the HTMT (Heterotrait-monotrait Ratio of Correlations) index for the model are presented in Table 3.

**Table 3.** Results of HTMT indicators for the second measurement model.

	B	CI	CV	EB	FR	LR	OR	PR	PR	SI	SR	ST
B												
CI	0.534											
CV	0.519	0.684										
EB	0.359	0.512	0.544									
FR	0.245	0.090	0.209	0.090								
LR	0.161	0.142	0.079	0.074	0.584							
OR	0.088	0.166	0.209	0.101	0.403	0.456						
PB	0.430	0.777	0.766	0.549	0.175	0.164	0.178					
PR	0.200	0.084	0.131	0.116	0.700	0.406	0.377	0.135				
SI	0.656	0.486	0.379	0.405	0.125	0.118	0.116	0.363	0.064			
SR	0.169	0.071	0.057	0.100	0.297	0.382	0.631	0.094	0.520	0.067		
ST	0.507	0.564	0.715	0.586	0.270	0.238	0.069	0.691	0.285	0.346	0.056	

Table 3 shows that all variables have an HTMT index of less than 0.9. We also checked the index on the diagonal of the Fornell–Larcker, which is greater than that of other factors. All observed variables have a factor higher than the factor it measured other factors with. Thus, based on the three criteria for measuring the distinction value of the research factors, all the factors in the model achieved differential values.

Table 2 has synthesized specific measurement model inspection results. After we used the three evaluation criteria of the scale: (1) Internal Stability, (2) Convergent Validity, and (3) Discriminant Validity, we found that most research factors were accepted (except the B6, LR1, FR2, and PR3 variables). The research model had no changes compared to the original and was used for analyzing the structural model in the next step.

#### 5.1.3. Structural Model

##### Evaluate Collinearity Phenomenon

The collinearity test results are shown in Table 4. Because the structural model of the theoretical model only has one dependent variable, which is CI, the VIF coefficient was calculated for the model consisting of the independent variables B, CV, EB, FR, LR, OR, PB, SI, SR, ST, with dependent variables as the CI. Table 4 shows that all independent variables have a VIF coefficient smaller than 5, which means that multi-plus does not exist in the model.

**Table 4.** Collinearity Statistics (VIF).

	Constructs	CI
B.	Beliefs	1.927
CI	Continuance intention	
CV	Convenience	2.341
EB	Economic benefit	1.514
FR	Financial risk	1.621
LR	Legal risk	1.385
OR	Operational risk	1.571
PB	Perceived benefit	1.996
PR	Perceived risk	1.587
SI	Social influence	1.661
SR	Security risk	1.583
ST	Seamless transaction	1.860

Source: Author synthesized the information from research data.

#### Assess the Suitability of Relationships

Table 5 presents the results for the *p*-value, T Statistic, and Standard Deviation of each factor affecting the dependent variable.

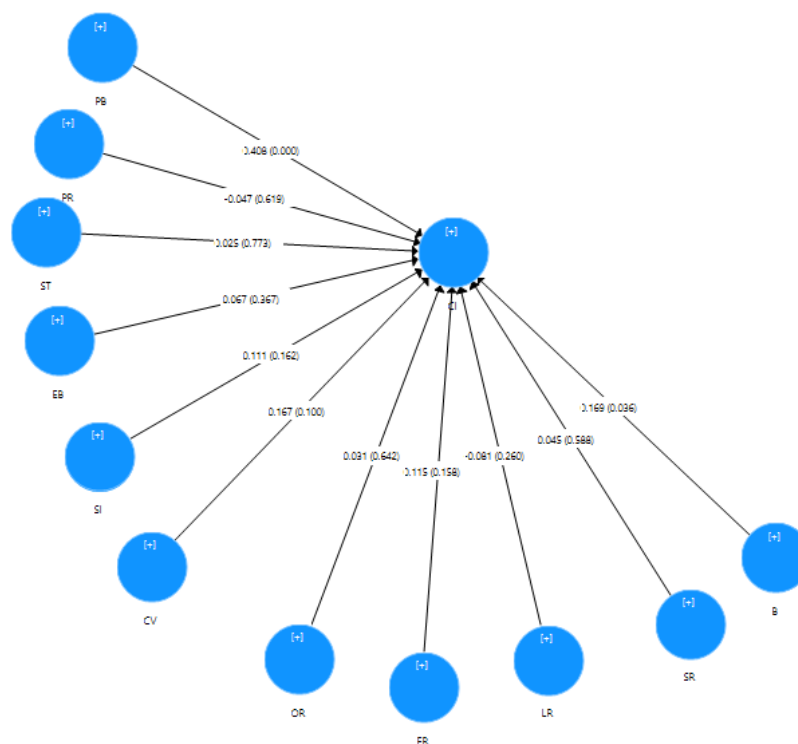
**Table 5.** Results for *p*-values, T Statistics, and Standard Deviation of each factor.

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistic ( O/STDEV )	<i>p</i> Value
B → CI	0.169	0.176	0.075	2.242	0.025
CV → CI	0.167	0.149	0.100	1.669	0.096
EB → CI	0.067	0.067	0.074	0.901	0.368
FR → CI	0.115	0.070	0.077	1.493	0.136
LR → CI	−0.081	−0.072	0.071	1.150	0.251
OR → CI	0.031	0.042	0.066	0.466	0.641
PB → CI	0.408	0.403	0.080	5.120	0.000
PR → CI	−0.047	−0.024	0.090	0.521	0.603
SI → CI	0.111	0.112	0.070	1.572	0.117
SR → CI	0.045	0.042	0.079	0.562	0.574
ST → CI	0.025	0.034	0.083	0.300	0.764

Source: Author synthesized the information from research data.

Considering a *p*-value index of 0.01, it can be seen that only two factors are of statistical significance, which are beliefs and perceived benefit. All this demonstrates that other factors generally do not affect the Continuance Intention to use Fintech, as originally expected. The cause of this outcome will be explained more clearly in the results.

Figure 2 below shows the results of the model inspection on the Smart PIs software.



**Figure 2.** Model results. Source: Author synthesized the information from research data.

The model test results show that benefits of feelings from Fintech, beliefs, convenience, and financial risks have a negative impact, decreasing the intention to continue using Fintech (the path factors were respectively 0.408; 0.169; 0.167; 0.115). Furthermore, economic benefits, security risks, and operating risks have little impact on the intention to use Fintech (with a path coefficient of 0.067; 0.045; 0.031). Legal risk variables and perceived risk have an opposite effect (with a path coefficient of  $-0.047$ ;  $-0.081$ ).

## 6. Discussion

Generally, there are only a few studies in developing countries, and in Vietnam in particular, which is what motivated us to conduct this study, focusing on benefits and risks that affect the decision to continue to use Fintech in the future. In addition, along with Fintech's rapid development in the context of the COVID-19 pandemic, it is an important new point to understand what affects the intention to use as well as the awareness of Fintech services.

Firstly, Continuance Intention was greatly influenced by Perceived Benefit, including three types of benefits: Convenience, Economic Benefits, and Seamless Transaction. This model was also applied in Forsythe's study (Forsythe et al. 2006). Convenience is obtained when Fintech changes the user's habit from mainly in-cash to non-touch transactions. In addition, users can utilize smart devices to perform many remote financial services. This promotes the participation of a young user group in the use of Fintech services; this group adapts fast to technology and opts for convenience in daily life. Seamless Transaction also affects the benefits of feeling. Seamless transactions help clients to get immediate benefits, providing easy contact with customer-friendly financial services platforms (Zavolokina et al. 2016). A characteristic of traditional finance is that users cannot trade when trading institutions have offended their sessions, while Fintech allows users to trade quickly at any time. Similarly, economic benefit is also worth considering because the fee is exempted from fixed costs such as those imposed by the trading system, and the personnel is replaced with technology. This more or less affects trading costs on fintech platforms. According to Mackenzie (2015), Fintech mobile transfers or P2P loans can reduce costs for users, comparable to traditional financial service providers. The benefit of the Continuance

Intention suggests that users have gradually become aware of the valuable benefits that Fintech brings. They use it more in everyday life, especially for small transactions.

Secondly, Perceived Risk has a negative impact on Continuance Intention to use Fintech, which means that users hesitate when faced with the risks they may encounter, including Operational Risk, Security Risk, Legal Risk, and Financial Risk. Indeed, the fact that technology platforms often have errors will prevent the intention to continue transactions, generating psychological insecurity if important transactions must be made. This is consistent with the views of many studies, such as those by [Kuisma et al. \(2007\)](#); [Benlian and Hess \(2011\)](#); [Kim et al. \(2008\)](#). Moreover, the psychological fear of leaking personal information, especially finance-related information, is a big concern because there have been many information leaks that have caused significant damage in the financial industry. This result is also consistent with the results of [Schierz et al. \(2010\)](#) and [Littler and Melanthiou \(2006\)](#). The financial risk handling policy of most Fintech companies has not guaranteed users' interests. Risk handling in cases related to financing is quite delayed and often takes a long time, sometimes not resolved, which is also the main reason why Fintech transactions often do not have a high value. In the case of a dispute, although the government has relevant laws, it is also a new field, the code is not really complete, and has not been accessed by many people.

Thirdly, Social influence positively affects users; they use Fintech due to the introduction by other people or from seeing people around them. This will help expand the user network and promote the range of other utilities. Oliveira's research confirms that Social Influence will influence the intention of mobile payment behavior because individuals are easily influenced by others ([Oliveira et al. 2016](#)). An example is in the field of money transfer; if more people use Fintech, they can transfer money to each other in the same system or outside the system. However, if the recipients do not use it, they will have to transfer money in another form, such as cash.

Fourthly, users put much belief in the service providers and Fintech platforms. In doing so, they believe that the security of their personal information and their transactions occur when they do not dare to question. A similar opinion was also concluded by ([Omar Ali et al. 2020](#)) and ([Chandio et al. 2013](#)), who hold the view that trust strongly influences the intention to use online banking and is an important component contributing to online banking and the integrity of the information technology management team. This can explain the company that provides services to improve the security system to meet international certification requirements on their platforms and extensive information on communication channels. In addition, the regulations of the state are not adequate but have been and are being amended gradually to ensure that the benefits of users are also the reason for more trust from users. Notifications of transparent transactions that are clear and sent to them immediately allow users to check for themselves and directly report to the system in case problems arise. Therefore, the factor of confidence positively influences the intention to use Fintech.

In general, the research results presented are mostly without statistical significance. This could be because the Fintech market has only developed in recent years, so the number of people who know and use it is very small compared to the population size. In the era of the COVID-19 pandemic, new consumers have a more precise awareness of the benefits that Fintech brings, but because the study was deployed in the early stages of the epidemic, they are still unable to evaluate all the sets. Despite the benefits, the risks still exist, even in epidemics. The legal corridor is unclear with most units of the release of unexpected applications, which do not help users to understand the rights and risks, leading to a lack of motivation to use the Fintech service. Therefore, further research is needed in this context during and after the COVID-19 pandemic in order to make a more accurate assessment of this issue.



## 7. Conclusions and Implications

### 7.1. Conclusions

This study documented the following significant results: Firstly, the benefits of using Fintech positively affect users, thanks to the economic benefits and the convenience of using Fintech.

The benefits include easy transactions, safety and security levels, autonomy, advantages, and customers' attitudes. This study also strengthened the theory of the TAM model and previous studies. From there, to improve the likelihood of using Fintech services in personal customer payments, credit institutions need to improve the quality of service by continuously innovating, making the service convenient and comfortable for users.

Secondly, the intention to continue using Fintech is positively related to the benefits from Fintech and is negatively affected by the risks it brings. Therefore, Fintech service providers need to focus on the benefits factor that Fintech offers and the negative effects of risks to enhance the perceived benefits and reduce risks during the use of Fintech.

### 7.2. Theoretical Contribution

For the TRA model, Perceived Risk and Legal Risk have a negative effect on the dependent variable, representing the user's anxious attitude towards perceived risks. Likewise, the perception of benefits when using Fintech positively affects their intention to use. This is completely consistent with Ajzen's theoretical framework (Ajzen and Fishbein 1975).

The research has contributed to the background theory mentioned above. According to the TAM model, perceived usefulness and ease of use affect users' attitudes, which in turn influence the intention to use. The perceived benefit factor in the research model of the topic also had a great impact on users' intention to use Fintech, playing the most important role among all factors surveyed.

In addition, some results contributed to the results of previous studies. In the context of emerging markets, users' awareness, behavior, and habits of using Fintech in Vietnam were still low, but there were changes, especially during the COVID-19 pandemic. This shows the impact of factors that affect the intention to use Fintech, with the biggest influence coming from the Perceived Benefit factor. David asserted that perceived benefits positively influence the use of products and services (Peter and Tarpey 1975), similar to the views of Liu with regard to the use of mobile payments (Liu et al. 2012), the use of Bitcoin (Abramova and Böhme 2016), or when shopping online (Batara et al. 2018). Therefore, with similar results, this study has contributed to previous studies, providing more understanding of user groups from developing countries.

The research results also showed the impact of the trust factor on the intention to use Fintech, which is the second biggest influencing factor after Perceived Benefit. The trust factor was also included in the research model, and the results are consistent with our point of view. Ali asserted that trust strongly influences the intention to use online banking (Omar Ali et al. 2020); Chandio's view also stated that trust is an important component contributing to online banking applications (Chandio et al. 2013).

### 7.3. Practice Contribution

After implementing the research analysis process, we found that the companies currently providing financial services need to address some of the issues below to promote the continuous use of their services by their customers:

Fintech service organizations need to invest more in information technology and improve information security for users; they also need to try to make it easy to understand the interface design and increase users' comfort. Secondly, Fintech service providers need communication and promotion through the media, highlighting the benefits and convenience when using Fintech in payment. Thirdly, one of the major interests of customers is the company's settlement policy in case there is a loss of customers' rights. The capacity to handle risks and the complaints of organizations and enterprises that provide financial

services is still weak, but not deeply, leading to delays in risk processing and damage to users. Therefore, companies need to focus on this particular team, improve the relevant professional capacity, and commit to compensation and transparent policies for users to trust the products derived from technology. Fourthly, financial technology products show the capacity to be superior to traditional financial services in terms of convenience. This is also why users are gradually using these products more in everyday life. Therefore, businesses and service companies need to invest in improved research to enhance convenience and integration with many new features close to users, thereby creating the riddle effect and expanding the user network. Fifthly, state regulations can affect the intention to use financial technology products. Regulations are still loose and do not solve core problems. With the goal of developing non-cash payments, the improvement of the legal system will inevitably help financial technology services in particular, and the Vietnamese financial landscape in general, facilitating the transfer of users and catching up with the trends of the world.

Although the study was completed and achieved significant results, there are some limitations. Firstly, because the study uses a small number of observations, generalizability may suffer. Secondly, this study focuses on young people in Vietnam, so it is not representative of all behaviors across age groups. Research subjects were mainly aged 18–24, limiting the types of subjects and not considering more age categories. In the future, we expect to expand the scope of the research, especially in the age group from 25 to 39, to have a more comprehensive assessment to supplement the existing results, thereby improving the applicability of the research topic. Finally, though the conclusions are meant to encourage users to use Fintech, due to the restriction of sampling, the general ability of the study is limited.

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