Do Perceived Security and Financial Literacy Affect the Use of Financial Technology?

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Abstract:

The purpose of this study is to demonstrate the variables that affect college students' use of financial technology (Fintech). This research adopts the Technology Acceptance Model (TAM) theory. This study is quantitative research with a research sample of 397 out of 45,713 population of Sebelas Maret University students taken by purposive sampling technique. Collecting data with a google forms questionnaire. The data analysis technique uses instrument validity and reliability tests, multicollinearity test, goodness of fit test, and Hierarchical Regression Analysis with SmartPLS software. The study's findings suggest that perceived security and financial literacy positively and significantly influence perceived usefulness; perceived security and financial literacy positively and significantly influence perceived ease of use; perceived security, financial literacy, perceived usefulness, and perceived ease of use positively and significantly influence the use of fintech. In addition, perceived usefulness and ease of use partially mediate the relationship between perceived security and financial literacy on fintech usage. This research can be a suggestion for Fintech service providers to improve fintech security and encourages students to improve financial literacy.

Keywords: Financial Technology, Perceived Security, Financial Literacy, Perceived Usefulness, Perceived Ease of Use.

Introduction

Advances in information and communication technology have had a major impact on human existence, changing social, educational and economic aspects. The development of information and communication technology has greatly changed human life, both in terms of education, social, and economic aspects. The way humans live and work can fundamentally change with the new technology in the industrial revolution. The existence of the internet can facilitate human communication with machine intermediaries without being limited by space and time. The most recent technological advancements have been made possible by the advance-

-ment of technology in this digital age. One such area is finance, where financial technology (Fintech), is prevalent. Fintech, a new financial industry sector, uses technology to improve financial operations. Fintech essentially helps businesses, entrepreneurs, and individual consumers handle their financial affairs (Putri et al., 2023).

Based on the survey results of the Indonesian Fintech Association (AFTECH) in 2022/2023, the main users of fintech come from SMEs (Small and Medium Enterprises) 28%, Micro Enterprises 13.3%, B2B (Business to Business) 16%, and from Individuals 42.7%. This shows that the main users of most fintech services are individuals. This means that fintech has an important role for individuals in helping them achieve their financial goals. An individual uses fintech for various reasons, including to simplify financial transactions, manage personal finances, make investments, and access financial products and services that were previously unavailable in conventional channels. Fintech is a valuable innovation in providing services to the tech-savvy younger generation and has the potential for more fintech growth and adoption. Meanwhile, the individual user data can be identified based on age from Figure 1 below.

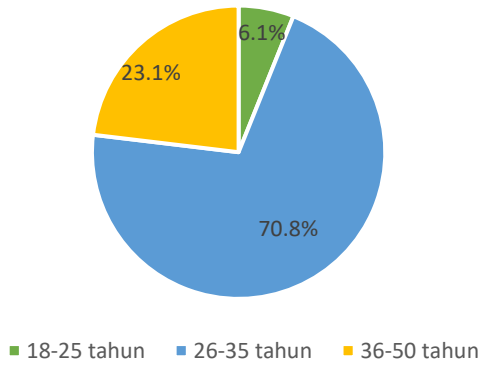

Figure 1. Percentage of Fintech Users by Age (2023)
Source: Asosiasi Fintech Indonesia, (2023)

Based on Figure 1, it presents that by age, 70.8% of fintech users are between 26 and 35 years old. Young workers in this age group are usually familiar with technology and are looking for quick and easy financial solutions. Meanwhile, the age range of 36-50 years is 23.1% and finally the age range of 18-25 years is 6.1%. This shows that the age range of 18- 25 years has the lowest percentage in the use of fintech, where 18-25 years is the age of students pursuing undergraduate studies.

Fintech in addition to providing benefits in terms of finance but can also provide risks in its use, including: fraud, card hijacking, and also user data leakage. Privacy and data of fintech users are vulnerable to data misuse by irresponsible individuals, either intentionally carried out by hackers or unintentionally due to malware attacks (Putri et al., 2023). Many individuals are still hesitant to transact with fintech for

some of these reasons. Cases of leakage and misuse of people's personal data by irresponsible parties often occur in Indonesia. Personal data leaks often occur in financial institutions, especially in fintech services. Based on data quoted from the databoks.katadata.co.id page written by Mutia (2022), 36.6% of respondents believe that data leaks on digital wallet services make digital wallets considered unsafe as fintech products. This can raise concerns for customers about using fintech.

Fintech services are becoming more and more crucial in conducting individual financial transactions, but these services carry many risks, including conventional financial risks, such as credit, liquidity, and operational risk or internet risks, such as card hijacking, fraud, and data leakage (Long et al., 2023). Therefore, to overcome these risks, users must have adequate knowledge to make financial decisions in the adoption and use of fintech. The advancement of fintech services must be accompanied by good financial literacy to avoid negative risks in using financial products and services. The ability to understand and apply information to make wise financial decisions is known as financial literacy. Indonesia's financial literacy score in 2022 is 49.68%, based on the results of *Otoritas Jasa Keuangan* (OJK) *Survei Nasional Literasi dan Inklusi Keuangan* (SNLIK) (*Asosiasi Fintech Indonesia*, 2023). This figure is still classified as a low financial literacy category because it is still below 60% based on the level of financial literacy in the Indonesian OJK (Chen & Volpe, 1998). The low level of financial literacy will affect a person in making choices about finance, because financial literacy is the most important part of financial decision making. An individual will easily fall into harmful finances if they do not have the right financial knowledge and behavior.

Perceived usefulness and ease of use are two elements that often influence a person's decision to use fintech. Perceived usefulness is the benefit perceived by fintech users, while perceived ease of use is the ease and level of efficiency and effectiveness of fintech services. According to research Singh et al. (2020), the perception of the ease and usefulness of fintech has a major impact on how people utilize it. This is consistent with research findings Bergmann et al., (2023) which shows that perceived ease of use and usefulness have a big impact on users' intention to keep using fintech. However, this contradicts research by Qi et al., (2024) who found no significant relationship between perceived usefulness factors and fintech usage.

Previous research has analyzed the components that influence people to use fintech, with perceived security as the main factor (Singh et al., 2020; Putri et al., 2023; Stewart & Jürjens, 2018; Nandru et al., 2023; and Ryu, 2018). Research by Singh et al., (2020) which examines the effect of responsiveness, perceived security and social influence on the use of fintech states that perceived security and responsiveness are significant factors in the use of fintech and perceived security as a technological

attribute that is more important in determining the use of fintech. Putri et al., (2023) conducted research on privacy variables and perceptions of data security and the quality of administrative services with the result that privacy and perceptions of data security directly affect the use of fintech, but the quality of administrative services has no effect. Meanwhile, research conducted by Stewart & Jürjens, (2018) regarding the influence of data security perception variables (DU), customer trust (CT), user design interface (UI) results in that DU, CT, and UI variables are the main factors and have an important impact on fintech adoption. Nandru et al., (2023) also strengthens the results of previous research, which proves that security perceptions are an important factor in using mobile payments. However, this is different in research Ryu, (2018) who found that perceived security negatively influences fintech adoption because the risk is too high.

Previous research analyzing the factors influencing the adoption of fintech services, only a few have directly examined the role of financial literacy on the adoption of fintech services (Long et al., 2023; Nguyen et al., 2024; Foster et al., 2022; Lo Prete, 2022; and Li et al., 2020). Previous research provides mixed empirical results regarding the role of financial literacy on fintech usage. Research Long et al., (2023); Nguyen et al., (2024); Foster et al., (2022); Lo Prete, (2022); concluded that in terms of fintech usage, financial literacy is a significant factor and has a large impact. However, in research Setiawan et al., (2021) the effect of financial literacy on fintech adoption is very small. While in research Li et al., (2020) found a negative correlation and no influence between financial literacy and fintech usage.

The research that researchers will conduct is to examine the relationship between the variables of perceived security, financial literacy, perceived usefulness, perceived ease of use of fintech using the Technology Acceptance Model (TAM) theory. TAM is one of the theories that looks at how people accept new technology. TAM adopts two main variables, namely Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) in examining the factors that influence the use of a new technology. The application of TAM theory in this study is to prove the determinants of fintech use, where the perception of security perceptions and financial literacy as external variables that have not been widely studied and still have uncertainty in previous studies, as well as perceived usefulness and perceived ease of use as mediating variables that are in accordance with the concept of TAM theory.

Based on the explanation above, the problem identification in this study are: 1) There are still many cases of data leakage in fintech products and services that can raise concerns for users about fintech security; 2) Indonesia's financial literacy index is still in the low category, even though financial literacy is very important in using fintech services; and 3) There are research gaps and uncertainties in previous studies related to factors that contribute to fintech adoption.

The aims in this study are: 1) Knowing the effect of perceived security on perceived usefulness, perceived ease of use, and use of fintech; 2) Knowing the effect of financial literacy on perceived usefulness, perceived ease of use, and use of fintech; 3) Knowing the effect of perceived usefulness on the use of fintech; 4) Knowing the effect of perceived ease of use on the use of fintech; and 5) Knowing the mediating effect of perceived usefulness and perceived ease of use on the relationship between perceived security and financial literacy on the use of fintech.

Literature Review

a. Use of Fintech

The term "use" refers to actual behavior when a technology or system is adopted. According to Nandru et al., (2023), the use of fintech is defined as a way to quantify how frequently and how long it is used for financial job completion. This implies that actual utilization should be determined by utilizing technology often and consistently. Therefore, a person's conduct in adopting fintech is demonstrated by their use of it.

b. Perceived Security.

Perceived security according to Fan et al., (2018) refers to how safe people trust their personal data and information when using a service with a mobile device. Perceived security is a person's belief in the likelihood that others will not see, store, or change personal information when doing work with technology (Nikkhah & Sabherwal, 2022). Perceived security in the context of technology means the extent to which a person believes that a technology or service is safe to use (Palanisamy & Wu, 2021). Meanwhile, in the context of fintech, perceived security refers to the extent to which users' personal information and data are safe when using fintech services.

c. Financial Literacy

According to Chen & Volpe, (1998), Financial literacy is a financial knowledge, attitudes, skills, awareness and behavior related to making good and effective financial decisions. Financial literacy includes not only knowledge and understanding of financial concepts and risks, but also the ability to apply these concepts and information to make wise decisions in a financial context (Lusardi, 2019). Financial literacy can be interpreted as the ability to understand and apply information to make wise financial decisions.

d. Perceived Usefulness

Perceived usefulness is the level of a person's belief that new technology can provide benefits in the performance and can increase work productivity and effectiveness (Davis, 1989). According to Venkatesh

et al., (2003), perceived usefulness is a variable that helps one to understand the behavior of technology users both at the adoption and post-adoption stages. An individual will be able to quickly complete tasks and enjoy the benefits of using a technology. In the context of fintech, perceived usefulness is defined as the extent to which fintech can be useful to users in improving the productivity and effectiveness of their financial transactions.

e. Perceived Ease of Use

Perceived ease of use is the level of an individual's belief that new technology is easy to use, easy to access and does not require additional effort in using technology (Davis, 1989). Perceived ease of use refers to the extent to which the technology is considered user-friendly (Albashrawi & Motiwalla, 2019) and does not require additional effort from the user in terms of knowledge or skill level (Sarkar et al., 2020). In the context of fintech, perceived ease of use is defined as the extent to which fintech can be easily used, easily accessed and does not require additional effort for financial transactions.

f. Technology Acceptance Model (TAM)

The theory used in this study is TAM Theory or a new technology or system acceptance model created by Davis in 1989. TAM is one of the theories widely used by researchers in studying the acceptance of new technology among the public. TAM combines two core factors into the TRA model, namely: Perceived Usefulness and Perceived Ease of Use.

HYPOTHESIS DEVELOPMENT

Perceived Security, Perceived Usefulness, Perceived Ease of Use and The Use of Fintech

TAM theory implies that a person's drive to adopt technology is influenced by attitudes derived from perceived usefulness and perceived ease of use which are also influenced by external (Davis, 1989). One of the external variables used in this study is perceived security. This study adds that technology attributes related to perceived security are antecedents of perceived usefulness and perceived ease of use. If fintech has a good level of security, the better the benefits and convenience felt by users. Many empirical studies have incorporated security perceptions into TAM theory (Singh et al., 2020; Putri et al., 2023; Stewart & Jürjens, 2018). The results show that perceived security can be an antecedent of perceived usefulness and perceived ease of use of fintech.

This study also links perceived security with the use of fintech. Perceived security has an important role in influencing a person's use of fintech, because individuals will choose financial services that can keep personal information or data more secure. Perceived security is an important component that influences individuals in using fintech. According to Singh et al., (2020) and Nandru et al., (2023) perceived

security has a positive and significant influence in encouraging someone to use fintech and provide satisfaction when using fintech so that it can improve their financial performance. Based on this description, this study assumes that:

H1a : Perceived security positively and significantly influence perceived usefulness in students.

H1b : Perceived security positively and significantly influence perceived ease of use in students.

H1c : Perceived security positively and significantly influence use of fintech in students.

Financial Literacy, Perceived Usefulness, Perceived Ease of Use, and The Use of Fintech

TAM theory explains that a person's drive to adopt technology is influenced by attitudes derived from perceived usefulness and perceived ease of use which are also influenced by external variables (Davis, 1989). (Davis, 1989). The second external variable used in this study is financial literacy. This study adds that skills related to financial literacy are antecedents of perceived usefulness and perceived ease of use. There are still few studies that explain that financial literacy factors can predict perceived usefulness and perceived ease of use of fintech (Long et al., 2023; Setiawan et al., 2021). Individuals with good financial literacy tend to be more critical in interpreting the usefulness or benefits of fintech and will find it easier to use fintech in their financial transaction process so that it can form a positive attitude towards using fintech. This means that the better a person's financial literacy, the better the perceived usefulness and ease of use.

This study also links financial literacy with the use of fintech. The relationship between financial literacy and technology use has been investigated, but few have directly examined the role of financial literacy on the adoption of fintech services. For example, research conducted by Long et al. and Nguyen et al., (2024) found a positive and significant relationship between financial literacy and fintech usage. Individuals with higher levels of financial literacy will have good financial behavior in using fintech. Based on this description, this study formulates the hypothesis that:

H2a : Financial Literacy positively and significantly influence perceived usefulness in students.

H2b : Financial Literacy positively and significantly influence perceived ease of use in students.

H2c : Financial Literacy positively and significantly influence the use of fintech in students.

Perceived Usefulness and The Use of Fintech

TAM theory explains that a person's drive to adopt technology is influenced by attitudes derived from perceived usefulness and perceived ease of use which are also influenced by external variables (Davis, 1989). (Davis, 1989). In this study, perceived usefulness is interpreted as the extent to which students believe that using fintech will provide benefits in financial transactions and can increase work

productivity and effectiveness. If fintech can provide many uses or benefits for students in supporting financial transactions, then students will often use fintech in their daily lives. Many empirical studies use TAM theory to assess user acceptance of fintech. Research conducted by Singh et al., (2020) and Bergmann et al., (2023) show that perceived usefulness has a positive influence on the use of fintech. Based on this description, this study formulates the hypothesis that:

H3 : Perceived Usefulness positively and significantly influence the use of fintech in students.

Perceived Ease of Use and The Use of Fintech

TAM theory explains that a person's drive to adopt technology is influenced by attitudes derived from perceived usefulness and perceived ease of use which are also influenced by external variables (Davis, 1989). (Davis, 1989). In this study, perceived ease of use is interpreted as the extent to which students believe that using fintech in financial transactions will be easier and does not require high effort. If fintech provides facilities that are easy to use, then students will not find it difficult and will often use fintech in financial transactions. Many empirical studies use TAM theory to assess user acceptance of fintech. Research conducted by Singh et al., (2020) and Bergmann et al., (2023) show that perceived ease of use has a positive influence on the use of fintech. Based on this description, this study formulates the hypothesis that:

H4 : Perceived Ease of use positively and significantly influence the use of fintech in students.

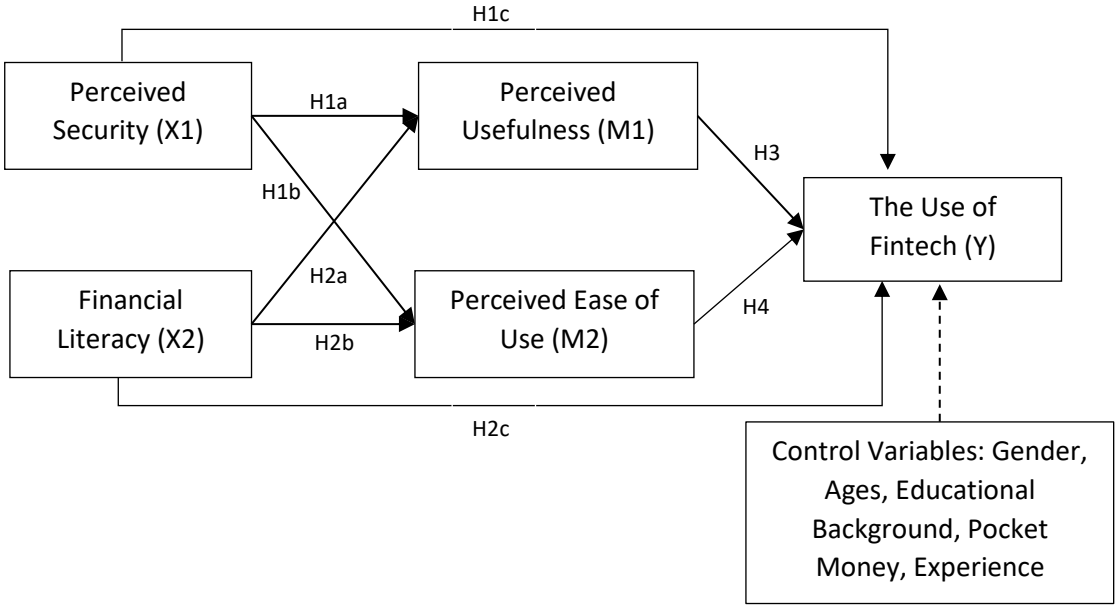

Figure 2. Framework of Thinking and Hypothesis Development

Research Methodology

This type of research is quantitative research using survey method. The population in this study were Strata-1 and Diploma program students at Sebelas Maret University, totaling 45,713 population. This study used a sample of 397 students who were taken using purposive sampling technique by considering the criteria of students who have used or are using fintech. Data collection using questionnaires and tests conducted online through google form media and distributed online to respondents through social media, such as WhatsApp, Instagram, and Twitter.

Measurement of variables in this study using questionnaires and tests. The questionnaire on the variables of perceived security, perceived usefulness, perceived ease of use, and use of fintech uses a measurement scale in the form of a Likert scale with a range of 1-5, consisting of: 1) Strongly Disagree, 2) Disagree, 3) Undecided, 4) Agree, and 5) Strongly Agree. The variable Use of fintech is measured using statement items adopted from research Venkatesh et al., (2012); and Nandru et al., (2023). The perceived security variable is measured using statement items adopted from the research of Singh et al., (2020) and Nandru et al., (2023). Then, the perceived usefulness and perceived ease of use variables were measured using questionnaire items adopted from the research of Venkatesh & Davis, (2000); and Singh et al., (2020). Meanwhile, for the financial literacy variable, data collection uses a test with a score of 0 if the answer is wrong, and 1 if the answer is correct. The Financial Literacy variable is measured using questions adapted from "The Big Five" in research by Hastings et al., (2013).

Data analysis consists of Instrument Validity, which looks at the loading factor value and AVE value; and the Instrument Reliability Test, which looks at the Composite reliability value and Cronbach's alpha; Multicollinearity test prerequisite test for prerequisite test, goodness of fit test consisting of R-square, Q-square, Normed Fit Index (NFI), and Standardized Root Mean Square Residual (SRMR), and significance test for hypothesis testing seen from p-value, t-statistic and sample coefficient. The equation of hierarchical regression analysis can be formulated as follows:

$M1 = \alpha + k + aX_1 + e$

$M1 = \alpha + k + aX_1 + bX_2 + e$

$M2 = \alpha + k + aX_1 + e$

$M2 = \alpha + k + aX_1 + bX_2 + e$

$Y = \alpha + k + aX_1 + e$

$Y = \alpha + k + aX_1 + bX_2 + e$

$Y = \alpha + k + aX_1 + bX_2 + cM_1 + e$

$Y = \alpha + k + aX_1 + bX_2 + cM_1 + dM_2 + e$

Notes:

M_1 = Perceived Usefulness

M_2 = Perceived Ease of Use

Y = Use of Fintech

α = Constanta

k = Control Variables (Gender, Age, Educational Background, Pocket Money, and Experience)

a-d = Regression Coefficient

X_1 = Perceived Security

X_2 = Financial Literacy

E = Error

Results and Discussions

This study consists of the use of fintech as the dependent variable, perceived security and financial literacy as independent variables, and perceived usefulness and perceived convenience as mediating variables. The research questionnaire was distributed online through social media and distributed to 397 active students of Strata-1 (S1) and Diploma programs at Sebelas Maret University who have used or are using fintech. The data that has been collected is then tabulated and described as follows.

Table 1. Respondent Characteristics

Category	Frequency	Percentage
Gender		
Male	105	26%
Female	292	74%
Age		
16-20 years	215	54%
21-25 years	182	46%
Educational Background		
SMA	356	90%
SMK	41	10%
Monthly Pocket Money		
< Rp500.000	75	19%
Rp500.000 – Rp1.000.000	168	42%
Rp1.000.001 – Rp1.500.000	101	26%
> Rp1.500.000	53	13%
Experience of Getting Digital Literacy Lessons		
Yes	246	62%
No	151	38%

The characteristics of the respondents in Table 1 show that most of the respondents are female, the average age is 18-21 years old, most of them have a high school education background, the average

monthly pocket money is more than Rp500,000, and on average they have experience getting digital literacy materials.

Results of Validity and Reliability Instrument Test

The instrument validity test is carried out to ensure that the research instrument is good at measuring variables in a study. The loading factor value and Average Variance Extracted (AVE) is used to view the validity test. An indicator can be said to be valid and meet convergent validity if the loading factors value > 0.7, and the AVE value> 0.5, which means that the indicator can explain 50% or more of the variable (Hair et al., 2021).

Furthermore, the reliability test on each question item is to determine and measure the consistency of the instrument when used several times on the same object. The Cronbach's Alpha and Composite Reliability values were employed in this study's reliability test. If both the composite reliability (rho_c) value and the Cronbach's Alpha value are greater than 0.7, the research instrument is considered reliable (Hair et al., 2021).

Table 2. Results of Validity and Reliability Instrument Test

Variables dan Items	Validity		Reliability	
	Loading Factor	AVE	Composite Value	Cronbach's alpha
Use of *Fintech* (Y)		0,733	0,932	0,908
Using fintech services	0,854			
Using for financial transactions	0,912			
Frequent use of fintech	0,880			
Used in the last few months	0,880			
Use in everyday life	0,744			
Perceived Security (X)		0,590	0,878	0,827
Securely complete financial tasks	0,735			
Secure fintech transactions	0,774			
Provide security for personal data	0,768			
Trustworthy	0,830			
Has adequate security features	0,728			
Perceived Usefulness (M1)		0,644	0,927	0,908
Useful for completing financial transactions	0,790			
Facilitate financial tasks	0,833			
Complete tasks faster	0,841			
Improving effectiveness	0,809			
Increase independence	0,773			
Improving productivity	0,780			
Improving performance	0,787			
Perceived Ease of Use (M2)		0,631	0,911	0,882
Easy to use	0,751			

Variables dan Items	Validity		Reliability	
	Loading Factor	AVE	Composite Value	Cronbach's alpha
Easy to do what you want	0,713			
Easy to operate	0,839			
Easy to trace	0,806			
Requires no additional effort	0,796			
Interactions are clear and understandable	0,852			

Results of Analysis Prerequisite

This study uses multicollinearity test through SmartPLS software as a requirement for data analysis. Multicollinearity test is used to assess the correlation between independent variables in a model and to ascertain the level of similarity between items in the independent variables. The results of the multicollinearity test analysis, as shown in Table 3, indicate that there is no multicollinearity problem in the research model, because the VIF value only reaches 3.008 which indicates that it is smaller than 5. Thus, it may be said that the study model does not have a multicollinearity issue.

Results of Goodness of Fit Model and Significance Test

Table 3. Results of Hierarchical Regression Analysis

	Dependent is Perceived Usefulness		Dependent is Perceived Ease of Use		Dependent is Use of Fintech			
Variables	Model A1	Model A2	Model B1	Model B2	Model C1	Model C2	Model C3	Model C4
Control Variables								
Gender	0,073 (1,479)	0,091* (0,064)	0,053 (1,206)	0,068 (1,585)	0,129*** (2,851)	0,151*** (3,397)	0,098*** (2,696)	0,095*** (2,657)
Age	-0,016 (0,396)	-0,008 (0,187)	-0,044 (1,114)	-0,038 (0,955)	-0,003 (0,082)	0,013 (0,315)	0,017 (0,506)	0,026 (0,797)
Educational Background	-0,046 (0,864)	-0,049 (0,941)	-0,033 (0,658)	-0,034 (0,698)	-0,074 (1,611)	-0,073 (1,643)	-0,047 (1,555)	-0,047 (1,523)
Pocket Money	0,086 (1,861)	0,086* (1,942)	0,115*** (2,677)	0,113*** (2,715)	0,191*** (4,088)	0,197*** (4,401)	0,145*** (4,136)	0,126*** (3,598)
Experience	-0,017 (0,352)	-0,010 (0,211)	-0,036 (0,784)	-0,029 (0,654)	0,017 (0,355)	0,030 (0,663)	0,035 (0,986)	0,042 (1,211)
Main Variables								
Perceived Security	0,507*** (11,446)	0,484*** (11,600)	0,568*** (13,600)	0,548*** (13,623)	0,455*** (9,563)	0,428*** (9,392)	0,158*** (3,719)	0,085** (2,114)
Financial Literacy	-	0,145** (2,189)	-	0,126** (0,303)	-	0,208*** (3,137)	0,125*** (2,659)	0,114** (2,570)
Mediating Variables								
Perceived Usefulness	-	-	-	-	-	-	0,567*** (12,458)	0,367*** (5,587)
Perceived Ease of Use	-	-	-	-	-	-	-	0,308*** (4,509)
VIF Values								
Perceived Security	-	-	-	-	-	-	-	-

Variables	Dependent is Perceived Usefulness		Dependent is Perceived Ease of Use		Dependent is Use of Fintech			
	Model A1	Model A2	Model B1	Model B2	Model C1	Model C2	Model C3	Model C4
Financial Literacy	-	-	-	-	-	-	-	-
Perceived Usefulness	-	-	-	-	-	-	-	-
Perceived Ease of Use	-	-	-	-	-	-	-	3,008
Model of fit								
R^2	0,276	0,296	0,347	0,362	0,279	0,326	0,554	0,586
ΔR^2	0,247	0,020	0,307	0,015	0,196	0,047	0,228	0,032
Q^2	0,241	0,247	0,320	0,323	0,248	0,278	0,528	0,559
NFI	0,851	0,802	0,859	0,800	0,880	0,830	0,823	0,802
SRMR	0,057	0,057	0,056	0,057	0,051	0,054	0,054	0,057

Description: *** when p < 0,01; ** when p < 0,05; * when p < 0,1.

Model A1 shows that perceived security has a significant positive impact on perceived usefulness, with a sample coefficient of 0.507 and a p-value below 0.01. The t-statistic value that exceeds the t table (11.446 ≥ 2.58) proves that Hypothesis 1a, namely the effect of perceived security on perceived usefulness, is accepted. In Model A2, it proves that financial literacy has a positive and significant influence on perceived usefulness (β = 0.145, t = 2.189), where the p-value at 5% significant level and the t-value exceeds 1.96. Thus, hypothesis 2a proposed in this study can be confirmed.

Model B1 shows that perceived security has a significant positive impact on perceived convenience, with a sample coefficient of 0.568 and a p-value below 0.01. The t-statistic value that exceeds the t table (13.600 ≥ 2.58) proves that Hypothesis 1b, namely the effect of perceived security on perceived ease of use, is accepted. In Model B2, it proves that financial literacy has a positive and significant influence on perceived ease of use (β = 0.126, t = 2.303), where the p-value at 5% significant level and the t-value exceeds 1.96. Thus, hypothesis 2a, namely the effect of financial literacy on perceived ease of use, is accepted.

Model C1 shows that perceived security has a significant positive impact on the use of fintech, with a sample coefficient of 0.455 and a p-value below 0.01. The t-statistic value that exceeds the t table (9.563 ≥ 2.58) proves that Hypothesis 1c, namely the effect of security perceptions on the use of fintech, is accepted. In Model C2, it proves that financial literacy has a positive and significant effect on the use of fintech (β = 0.208, t = 3.137), where the p-value at 1% significant level and t-value exceeds 2.58. Thus, hypothesis 2c, namely the effect of financial literacy on fintech usage, can be accepted. Model C3 shows that perceived usefulness has a significant positive impact on fintech usage, with a sample coefficient of 0.567 and a p-value below 0.01. The t-statistic value that exceeds the t table (12.458 ≥ 2.58) proves that the effect of perceived usefulness on fintech usage is accepted. In Model C4, it proves that perceived ease of use has a positive and significant effect on the use of fintech (β = 0.308, t = 4.509), where the p-value

at 1% significant level and t-value exceeds 2.58. Thus, hypothesis 4, namely the effect of perceived ease of use on the use of fintech, can be accepted.

The goodness of fit test results for Models A1 and A2 show that the R-square value increases as the number of independent variables affecting the dependent variable increases, indicating that variations in perceived security and financial literacy can better explain variations in perceived usefulness for these models. The results for Models B1 and B2 show that the R-square value increases as the number of independent variables affecting the dependent variable increases, indicating that variations in perceived security and financial literacy can better explain variations in perceived ease of use for these models. The results in Models C1, C2, C3, and C4 show that the R-square value increases as the number of independent variables affecting the dependent variable increases, indicating that variations in perceived security, financial literacy, perceived usefulness, and perceived ease of use can better explain variations in fintech usage for these models.

The Q-square values for Models A1 to C4 are 0.241, 0.247, 0.320, 0.323, 0.248, 0.278, 0.528, and 0.559 respectively. These results indicate that the Q-square value is greater than 0. This indicates that the model has predictive significance. In addition, the NFI values were 0.851, 0.802, 0.859, 0.800, 0.880, 0.830, 0.823, and 0.802 respectively. The highest SRMR value in all models is 0,057. These findings indicate that the model has met the goodness of fit model test criteria, as evidenced by the NFI value which is in the range of 0.80 - 0.90 and the SRMR value which is smaller than 0.080. Therefore, it can be concluded that this model is a good model.

Results of Mediation Test

Table 4. Results of Mediation Test

Variables	*Original Sample*	*t-statistic*	Decision
X1 → M1 → Y	0,180***	4,776	Available Mediation Effect
X1 → M2 → Y	0,173***	4,027	Available Mediation Effect
X2 → M1 → Y	0,049**	2,237	Available Mediation Effect
X2 → M2 → Y	0,038**	2,183	Available Mediation Effect

Description: *** when p < 0,01; ** when p < 0,05; * when p < 0,1.

Note: X1 is Perceived Security, X2 is Financial Literacy, M1 is Perceived Usefulness, M2 is Perceived Ease of Use, and Y is Use of Fintech

The analysis was conducted using bootstrapping on SmartPLS to test the mediation of perceived usefulness and perceived ease of use on perceived security variables and financial literacy variables in relation to the use of fintech. The mediation test of the perceived usefulness variable on the perceived security and financial literacy variables on the use of fintech provides results that all p-values are below

0.01 and t-statistic ≥ 2.58. So it can be concluded that the variables of perceived usefulness and perceived ease of use act as mediators between the variables of perceived security and financial literacy in influencing the use of fintech. The direction of influence is positive, as indicated by the positive coefficient on the sample coefficient. Based on the significance value of the p-value, it can be concluded that the relationship between perceived usefulness and perceived ease of use in the perceived security and financial literacy variables on the use of fintech is partially mediated, because the regression test results show that the relationship between perceived security and financial literacy on the use of fintech is significant.

DISCUSSION

This study shows that the perceived security factor and the level of financial literacy have an impact on fintech adoption, by acting as a mediator between the perceived usefulness and perceived ease of use factors. This shows that perceived security and financial literacy have a strong and positive impact on fintech adoption among students at Sebelas Maret University. Therefore, it can be concluded that when users feel safe when using fintech and have a high level of financial literacy, they are more likely to utilize fintech services.

First, perceived security has a substantial and favorable impact on perceived usefulness, perceived ease, and use of fintech among college students. In other words, as the perceived security of fintech services increases, so do the perceived usefulness, perceived ease of use, and adoption of fintech by college students. The findings of this study are consistent with and can strengthen research conducted by Singh et al.; Putri et al., (2023); Stewart & Jürjens, (2018); Ryu, (2018); Nandru et al., (2023). Perceived security significantly affects perceived usefulness and perceived ease of use of fintech when compared to financial literacy. This research examines perceived security by assessing variables such as task completion security, personal information protection, service reliability, and the presence of adequate perceived security elements. Perceived security elements play an important role in conducting financial transactions using fintech. To ensure the security of financial transactions, it is imperative to enhance the security features of fintech services. These security measures will instill confidence in fintech customers, assuring them that their transactions are safe. Fintech organizations should prioritize the security of user data and information, as safeguarding users' personal data is of paramount importance to both consumers and fintech service providers. Ensuring the safe use of fintech can boost users' confidence, making them feel safe and secure when using fintech services, thus encouraging continued adoption.

Second, this study reveals that financial literacy has a favorable and substantial impact on perceived usefulness, perceived ease of use, and fintech usage. Consequently, a high and optimistic level of financial literacy directly correlates with an increase in perceived usefulness, perceived ease of use, and utilization of financial technology among university students. The results of this study can strengthen previous research (Long et al.; Nguyen et al., 2024; Foster et al., 2022; and Lo Prete, 2022) and can also answer the debate in the research of Li et al., 2020 which states that literacy has no effect on the use of fintech. The measurement of financial literacy in this study includes measures that assess individual knowledge and skills related to interest rates and compound interest, inflation, risk diversification, mortgages, and bond prices. Individuals who have higher levels of financial literacy will experience fewer difficulties when engaging in financial transactions using fintech, as they are more familiar with financial-related information and attitudes. Financial literacy is essential for individuals to utilize fintech services effectively, as it facilitates their access to various financial products and services offered through fintech platforms. Efficient financial transactions facilitated by fintech must be complemented with a comprehensive understanding of financial risks to prevent undesirable outcomes. Therefore, those with a higher level of financial awareness can utilize fintech as an efficient platform to conduct financial transactions.

Third, the findings show that the perceived usefulness of financial technology has a good and important impact on the adoption of financial technology among students at Sebelas Maret University. The usability of fintech is directly related to the benefits offered by fintech to students. This shows a positive correlation between the usefulness of fintech in facilitating financial transactions for students and the adoption of fintech by students. The greater the concrete benefits offered by fintech to users, the more real the adoption or use of fintech for financial transactions. The results of this study are in line with and can strengthen research conducted by Singh et al., (2020) and Bergmann et al., (2023) and can answer the debate in research Qi et al., (2024). The continued use of fintech services in financial transactions is directly influenced by their perception of the usefulness of the service and the level of trust and assurance. Therefore, it is imperative for fintech service providers to increase the benefits of using fintech and improve the functionality of faster information accessibility. In addition, fintech service providers should prioritize the development of highly reliable systems with minimum or zero error rates to improve the efficiency and effectiveness of financial transactions conducted through fintech.

Fourth, the findings show that perceived ease of use has a favorable impact on fintech adoption among students at Universitas Sebelas Maret. Consequently, the higher the perceived ease of use of fintech, the greater the incentive for individuals to adopt fintech for their financial activities. The impact

of perceived ease of use of fintech highlights the importance of fintech services that are user-friendly, efficient, easy to use, and uncomplicated. This is in line with research conducted by Singh et al., (2020) and Bergmann et al., (2023) which states that when the perception of convenience is in accordance with what is expected by fintech users, the use of fintech will be higher and users feel that they will continue to use it in helping to complete financial transactions. Therefore, it is imperative for fintech service providers to improve their service features to ensure ease of use, smooth navigation, simplicity, and minimal additional labor requirements, while maintaining clear and understandable interactions.

This research contributes to the TAM theory, which was originally founded by Davis in 1989. The TAM hypothesis states that a person's use of a system or technology is primarily influenced by two factors: Perceived Usefulness and Perceived Ease of use. Several studies have examined the factors that influence individuals' decisions to accept new technologies, specifically focusing on the perceived usefulness and perceived ease of use of technology in different countries around the world (Singh et al., 2020; Putri et al., 2023; Stewart & Jürjens, 2018; Ryu, 2018; Nandru et al., 2023). Nevertheless, the specific literature relating to this area is still evolving, resulting in a variety of research findings. This research has the potential to offer valuable insights that can significantly improve our understanding of the factors that influence the adoption of new technologies, particularly in fintech, particularly in Indonesia.

Conclusion

The following conclusions can be made in light of the findings of the hypothesis test and the earlier discussion: First, perceived security positively and significantly influence perceived usefulness, perceived ease of use, and use of fintech at Sebelas Maret University students. Second, financial literacy positively and significantly influences perceived usefulness, perceived ease of use, and use of fintech on Sebelas Maret University students. Third, perceived usefulness positively and significantly influences on the use of fintech in Sebelas Maret students. Fourth, perceived ease of use positively and significantly influences the use of fintech in Sebelas Maret University students. Fifth, perceived usefulness and perceived ease of use can mediate the relationship between perceived security and financial literacy on the use of fintech.

Implications. The results of this study can be a suggestion for fintech service providers to develop better security features and prioritize the protection of users' personal data and information. In addition, fintech service providers can create strong security policies, can utilize Artificial Intelligence in detecting threats, and can also provide guarantees that service providers will be responsible and compensate if there is a data leak that is financially detrimental. It is intended that students use fintech more than conventional to complete their financial transactions. The findings of this study can be an input for

students to improve their financial literacy in order to use fintech wisely and carefully to avoid losses caused by irresponsible parties. In addition, universities and families must also actively strive to instill an understanding of financial literacy, for example through public lectures on finance by inviting trusted resource persons from their fields, and can also hold study tours to Indonesian Bank or OJK so as to increase understanding of financial literacy in students. It is intended that students have awareness and interpret the importance of the attitudes needed in managing their finances, especially in using fintech to complete their financial transactions.

Limitations and Future Research. This study is only limited to variables of perceived usefulness and perceived ease of use that can mediate the relationship between variables of perceived security and financial literacy on the use of fintech, as well as a research population that is only limited to Sebelas Maret University students. Therefore, further research can add other variables that are still related to the use of fintech and can also use a wider research population, for example in students throughout Indonesia, or it can also be in the wider community so that it can produce better research and can be a correction or reference for further research.

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