

# Determinants of fintech adoption: evidence from SMEs in Indonesia

Determinants  
of fintech  
adoption

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## Abstract

**Purpose** – This study aims to explore the factors that determine the perceived benefits and the perceived risks of financial technology (fintech) and to evaluate the influence of perceived benefits, perceived risks and small and medium-sized enterprises' (SMEs') trust to continue using fintech.

**Design/methodology/approach** – This study involves SMEs in Indonesia. Non-probability with a convenience sampling technique was used in this study.

**Findings** – Convenience and economic benefits can explain the perceived benefits. Operational risk is stated as a risk factor felt by the respondents. Furthermore, the perceived benefits have a positive effect and the perceived risks show a negative effect on trust. At the same time, the individuals' intention to continue using fintech is determined by trust.

**Research limitations/implications** – Based on the theory of reasoned action (TRA), various benefits and risks of using fintech are used to build the construction of perceived benefits and perceived risk in building trust that will determine decision to continue using fintech.

**Practical implications** – This research can provide advice to managers to develop efficient payment systems, lower payment fee and error-free transactions. In addition, the fintech management needs to understand the risks related to operational risks that are a challenge for the users to decide to use fintech so that a reliable mechanism for using fintech can be developed. Furthermore, it will be useful for fintech developing companies as a reference in knowing the factors that influence users in continuing to use fintech, this allows fintech developing companies in Indonesia will be even more developed and accelerate the achievement of the Sustainable Development Goals.

**Originality/value** – To the best of the authors' knowledge, research on the factors that affect the trust of SMEs in adopting fintech has not been conducted. This study can be advantageous for fintech service companies and organizers in developing fintech strategies in terms of users who are involved in SMEs which is the population in Indonesia is enormous and has a significant role in the development of the country.

**Keywords** Behavior, Intention to continue using fintech, Trust, Fintech, SMEs, Perceived benefits, Perceived risks

**Paper type** Research paper

## 1. Introduction

Humans are the center of innovation in the new information technology paradigm that emerged as society 5.0 (Bartoloni *et al.*, 2022). Information technology directs various aspects of life toward innovation, including business aspect. Small and medium-sized enterprises (SMEs) in Indonesia have substantial parts considering its large number. SMEs as business actors should follow this development.

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Abraham Leon Bettinger (vice-chairman of Manufacturers Hanover Trust) explained that fintech is an acronym or abbreviation of financial technology, which combines bank expertise with modern management science techniques and computers (Bettinger, 1972). Milian, Spinola, and Carvalho (2019) mentioned that the term of fintech was initially included in the scientific literature review to provide some benefits such as fast financial information, lower transaction fee, fair business conduct and easy direct dealings with customers (Zavolokina, Dolata, & Schwabe, 2016). Fintech institutions expand their business volume by migrating their business activities to cell phones for certain transactions such as remittances.

Previous research has demonstrated that trust and the intention to use Islamic Fintech have a good and substantial correlation (Ali, Raza, Khamis, Puah, & Amin, 2021). In addition, perceived usefulness, customer innovation and user-friendliness determine the acceptance of Islamic Fintech services (Shaikh *et al.*, 2020). In general, trust has many measures (Dirks & Ferrin, 2001). The factors of perceived risks also play an important role in how users adopt fintech (Kim, Ferrin, & Rao, 2008). Accordingly, fintech has certain risks and benefits for customers, in addition to its overall impact on user intentions.

To fill this gap, a study being conducted is purposed to determine both positive and negative factors affect SME's intentions to continue using fintech, our paper investigate:

- Q1. What factors affect the perception of risks and benefits of SMEs in continuing to use fintech?
- Q2. What are the impacts of perceived risks and perceived benefits on the trust of SME actors in continuing to use fintech?
- Q3. How good is the predicted relationship between trust and the intention of SMEs to continue using fintech?

## 2. Theoretical framework

### 2.1 Fintech in Indonesia

Fintech is the use of modern technological innovations in the finance domain (Rabbani, Khan, & Thalassinou, 2020; Stewart & Jürjens, 2018). It is also an advancement in the field of financial services caused by technology. The purpose of fintech is to digitize payment mechanisms, result in cost reductions and create transparent and efficient payment systems. Fintech is often regarded as the best nonfinancial institution's modern invention. (Arner, Barberis, & Buckley, 2015). It is a combination of software and hardware that can mobilize funds with a high level of convenience (Lee, 2009).

In Indonesia, the growth of the fintech industry is revealed by the increasing number of licensed actors, the variety of financial service solutions offered and market adoption. The pandemic period of Covid-19 that hit the Indonesian economy made most of the Indonesian's way of life shift toward digital, including in the financial aspect. As of March 16, 2021, there are 148 fintech peer-to-peer lending or fintech lending providers registered and licensed in the Financial Service Authority, also known as Otoritas Jasa Keuangan (OJK). This demonstrates the prominence of fintech growth in Indonesia (OJK, 2021).

The theory used in this study is the theory of Reasoned Action (TRA) related to the perceived risks, perceived benefits, and trust to generate users' intention towards fintech. This theory asserts that attitudes toward behavior are appropriate predictors of an individual's behavioral intentions (Ajzen & Fishbein, 1977). This theory has been used in several studies including those related to the intention to use a Sharia credit card (Amin, 2013) and also the use of online sodaqoh (Amin, 2022). Based on the TRA, the intention to continue using Fintech will be affected by behavioral beliefs, which depend on the user's perception of using Fintech. In addition, the advantages and disadvantages to use Fintech can be assessed

as negative or positive behavioral beliefs that can control behavior and objectives as well as subsequent behavioral actions (Jurison, 1995).

## 2.2 Perceived benefits

Technology provides many benefits for business activities, in the case, technology in fintech will take some benefit for financial transactions so that it attracts users' interest (Viehland & Leong, 2007). Technology services can be useful when they contribute to the financial advantages and the easy mechanism for using those services (Walker & Johnson, 2006). Convenience in mobilizing funds in the use of fintech will increase users' confidence in the system built by the entities as well as build a positive image of fintech itself (Kim, Shin, & Lee, 2009). In addition, other studies have shown that perceived usefulness play an important role in influencing a person's decision to perform online waqf (Amin, Abdul-Rahman, Ramayah, Supinah, & Mohd-Aris, 2014). This statement is in line with the opinion de Kerviler, Demoulin, and Zidda (2016) which states that users will not hesitate in using fintech if the benefits of fintech itself have been felt.

## 2.3 Perceived risks

Fintech has uncertainty which is a part of the perceived risk. This uncertain state can be categorized into two parts; natural and behavioral uncertainty (Pavlou, 2003), argued that behavioral uncertainty is emphasized because it is directly related to the attitude of service providers, which means that there is no fraud in the fintech service. Technology can be accepted by society if they know how to use it (Lee & Allaway, 2002). Walker and Johnson (2006) argued that environmental or natural uncertainty relates to a person's inability to complete payment using the Internet. Whereas Siau and Shen (2003) stated that principally, these risks can reduce fintech services credibility. Conversely, if there is a decrease in the risks of uncertainty, it will increase the trust of users of fintech services (Dinev *et al.*, 2006).

Some studies have studied relationship of perceived risk and perceived trust (Wachinger, Renn, Begg, & Kuhlicke, 2013; Zhou, 2013; Luo, Li, Zhang, & Shim, 2010; Richard Eiser, Miles, & Frewer, 2002; Frewer, 1999; Mayer, Davis, & Schoorman, 1995). These perceived risks are usually seen at the account opening stage, for example, the issues of unauthorized transactions, documentation and personal security (Bauer, Reichardt, Barnes, & Marcus, 2005).

## 2.4 Trust

Dirks and Ferrin (2001) define trust as a multifaceted term with economic, social, behavioral, managerial and technical aspects. In multiple dimensions, trust is considered as a personal inclination to trust a provider (Mayer *et al.*, 1995). Fintech users often make decisions with imperfect information Kim *et al.* (2008). This requires consideration of trust in the user himself. Rempel, Holmes, and Zanna (1985) and Rotter (1980) argue that trust depicts a personal trustworthiness on a person or activity. The notion of trust here includes things that are broader than trust in someone, such as trust in the level of technology. This trust can change perceptions, behaviors and intentions to embrace innovation (Kuriyan & Ray, 2009; Kuriyan, Kitner, & Watkins, 2010; Smith, 2010; Yu, Cao, Liu, Gong, & Adee, 2016).

In e-commerce, the crucial thing in increasing the use of computer information technology is a trust (Jarvenpa, Tractinsky, & Vitale, 2000; De Visser *et al.*, 2016). User decisions to adopt fintech are based on trust because fintech is closely related to privacy data and financial transactions (Luo, 2002). In business transactions, trust plays an essential role because it has various benefits and risks (Lin, Lu, Wang, & Wei, 2011). Fintech service providers need extra

efforts to create a strong bond between fintech users and companies so that fintech users, in this case, SMEs do not hesitate to use and continue their fintech adoption.

### *2.5 Fintech continue intention*

Intention has an important role for someone to make a decision. Individual intention is affected by many factors, especially related to technology (Ali, Chin-Hong, & Imtiaz, 2015). The decision-making model regarding purchase intention in e-commerce was investigated by (Kim *et al.*, 2008). The prior study conducted by (Lee, 2009) proposed a hypothetical model to disclose the intention to use fintech specifically in online banking services. Whereas in this study, the perceived benefits and perceived risks were considered as a single dimension.

In this study, users' intentions to continue to use fintech were determined using perceived risks and perceived benefits (Kim *et al.*, 2008; Lee, Park, & Kim, 2013). Observing the perceived risks and perceived benefits about fintech is imperative because these are the main factors that affect users' intentions to adopt services. A positive significant correlation between perceived benefits and user intention to adopt fintech has shown in some previous research (Lee, 2009; Benlian & Hess, 2011; Lee *et al.*, 2013; Abramova & Böhme, 2016). Apart from the perspective of perceived benefits, perceived risk can be a barrier to use fintech. Previous research also has revealed that users' intention to use fintech is negatively affected by perceived risk (Lee, 2009; Benlian & Hess, 2011; Lee *et al.*, 2013; Abramova & Böhme, 2016).

Based on previous studies, the research hypotheses proposed in this study are stated as follows:

- H1.* Economic benefits, convenience and smooth transactions positively affect perceived benefits.
- H2.* Perceived benefits positively affect trust.
- H3.* Financial, legal, security and operational risks positively affect perceived risks.
- H4.* Perceived risks negatively affect trust.
- H5.* Trust positively affects intentions to continue using fintech.

## **3. Methodology**

Quantitative method was applied in this study. It was used to examine the hypotheses that have been formulated previously. The data used in this study were the primary data which were collected through questionnaires distributed both online and offline.

This study involved SME actors in Indonesia who use online media as a marker of their existence and focus on SMEs that market their products through the marketplace. This was taken into account considering the tendency of these parties to have used fintech in the operation of their business transactions so that the intention to continue using fintech is critical to study.

The number population was not limited because the number of research samples was unidentified. This study used nonprobability sampling with a judgmental sampling technique which refers to members of the population who are willing to provide information (Sekaran & Bougie, 2016).

### *3.1 Data analysis technique*

Before testing the hypothesis, the data were tested for validity and reliability and then the data were transformed. The next stage was hypothesis testing using structural equation

modeling (SEM) with the PLS (partial least square) application supported by the SmartPLS program.

### 3.2 Research model

This research is based on a survey with a questionnaire adapted from the previous literature. Before the final test, a pre-test was conducted to establish validity and reliability. The pre-test was conducted on 50 samples of respondents who have experience in Fintech (Ali *et al.*, 2021). The measurement scale of questionnaire used in this study is a Likert scale of 1–5. There are 153 samples were obtained from questionnaires distributed online and offline. The research model is depicted in Figure 1 as follows:

## 4. Results

### 4.1 Measurement model

In general, the constructs in Table 1 shows an adequate level of internal reliability/consistency.

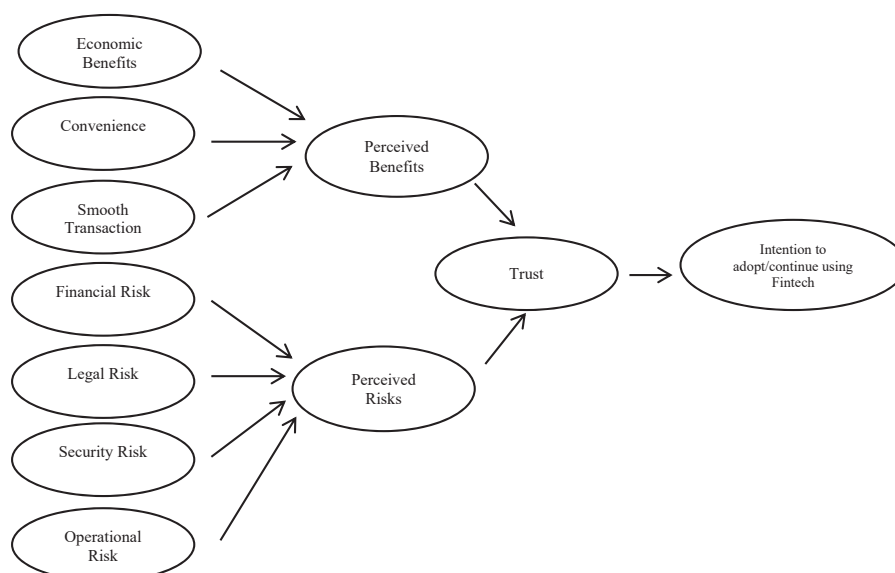
Table 1 also illustrates that all constructs for average variance extracted (AVE) reach a benchmark of 0.50 which demonstrates that the variables clarify a good degree of construct variance (Hair, Sarstedt, Hopkins, & Kuppelwieser, 2014).

Furthermore, the model was validated as a whole by using goodness-of-fit (GoF).

Table 2 shows the GoF is 0.715183. GoF values range from 1 to 0 with the interpretation of values being 0.1 (small GoF), 0.25 (moderate GoF) and 0.36 (large GoF). The GoF of the model is classified as large because the GoF value is  $> 0.36$ .

### 4.2 Hypothesis testing (resampling bootstrapping)

Based on the research objectives, the hypothesis test design can be made. Table 3 below displays the t-statistics and *p*-values that indicate the acceptance or rejection of the research



Source(s): Figure by the authors

**Figure 1.**  
Research model

**Table 1.**  
Convergent validity  
and internal  
consistency

Construct	Cronbach's alpha	CR	AVE
Smooth transaction (ST)	0.870	0.920	0.793
Convenience (CV)	0.901	0.939	0.837
Trust (TR)	0.860	0.913	0.779
Economic benefits (EB)	0.871	0.920	0.794
Continue using fintech (CI)	0.942	0.959	0.854
Perceived benefits (PB)	0.844	0.894	0.679
Perceived risks (PR)	0.827	0.897	0.745
Legal risks (LR)	0.873	0.913	0.724
Security risks (SR)	0.922	0.951	0.866
Financial risks (FR)	0.858	0.912	0.776
Operational risks (OR)	0.921	0.950	0.864
<b>Source(s):</b> Table by authors			

**Table 2.**  
Table *goodness-of-fit*  
(GoF)

Variables	Communality value
Economic benefits (EB)	0.793655
Smooth transaction (ST)	0.793394
Convenience (CV)	0.837203
Financial risks (FR)	0.776003
Legal risks (LR)	0.724336
Security risks (SR)	0.865672
Operational risks (OR)	0.864019
Perceived benefits (PB)	0.678988
Perceived risks (PR)	0.744911
Trust (TR)	0.778831
Continue using <i>fintech</i> (CI)	0.853956
Average	0.791906
<i>Goodness-of-fit</i> (GoF)	0.715183
<b>Source(s):</b> Table by authors	

**Table 3.**  
Table *t*-statistics and  
*p*-values

Variables	SRW	<i>T</i> -statistics	<i>p</i> -values	Notes
ST → PB	0.087	0.052	0.958	Not Supported
CV → PB	0.070	5.153	0.000	Supported
TR → CI	0.034	22.415	0.000	Supported
EB → PB	0.085	6.670	0.000	Supported
PB → TR	0.039	10.986	0.000	Supported
PR → TR	0.039	11.528	0.000	Supported
LR → PR	0.093	1.478	0.140	Not Supported
SR → PR	0.078	0.185	0.853	Not Supported
FR → PR	0.073	1.791	0.074	Not Supported
OR → PR	0.112	7.529	0.000	Supported
<b>Source(s):</b> Table by authors				

hypothesis. The level of confidence used is 95%, so the limit of inaccuracy is 5% and t-table value is 1.96 (Kwong & Wong, 2013; Latan & Ghozali, 2012).

Table 3 shows that the variables of convenience and economic benefits can explain the perceived benefits. While the smooth transactions cannot explain the perceived benefits. Furthermore, operational risks variables can explain the perceived risk while legal risks, security risks and financial risks cannot explain perceived risks. Furthermore, the perceived benefit and perceived risks variables can explain the trust variable. Finally, the variable of intention to continue using fintech can be determined by the trust variable.

$R$ -square ( $R^2$ ) was used as a structural model to construct variables; dependent with its independent variable.

Table 4 shows that the  $R$ -square value for the variable of Intention to continue using fintech shows the results by 0.566109. This means that trust affects the intention to continue using fintech by 56.61%. The result shows that 43.39% of other factors or variables that affect the intention to continue using fintech. The  $R$ -square value is 0.599478 for the trust variable. This means that the perceived benefit and perceived risk affect trust by 59.94%.

## 5. Discussion

The discussion of fintech in the context of SMEs in Indonesia is an interesting considering the number of SME actors in Indonesia so that it can be considered that SMEs are a reliable sector in the economic development of Indonesia. This is supported by the results of Findexable's research and analysis which states that Indonesia is ranked 9th in the Asia Pacific in the best fintech ecosystem (Wafi, 2021). Therefore, the results of this study are expected to provide a better understanding of the demand for fintech, especially in SMEs through the intention to continue using fintech. The results of this study indicate that economic benefits and convenience in transactions will support the perceived benefits from using fintech. Furthermore, economic benefits are the most influential factors on the perceived benefits. This means that SMEs using fintech will benefit from using fintech especially in terms of economic benefits. On the other hand, convenience in transactions affects perceived benefits of using fintech on the significant level. This can be explained that fintech users in the business world especially SMEs will feel the benefits of fintech for their business operations because fintech provides convenience and economic benefits. The results of this study enrich previous similar studies conducted by Ali *et al.* (2021), Ryu (2018), Okazaki and Mendez (2013) and Kim *et al.* (2009).

In terms of risk perception, in this study, operational risk is stated as a risk factor felt by respondents while financial risks, legal risks and security risks cannot explain the perceived risks or in other words, respondents will feel risks from the fintech they use because it has operational risk. Researchers found a small similarity between the results of the current study with the previous studies (Abramova & Böhme, 2016; Luo *et al.*, 2010; Ryu, 2018). A possible explanation from the finding is that financial risks, legal risks and security risks cannot describe the perceived risk of using fintech. In other words, respondents feel that the use of fintech tends to have no direction to financial, legal and security risks, which are quite disturbing. This is possible because fintech user of SMEs feel that the regulations (Minister of

Variables	$R$ -square value
CI	0.566109
PB	0.734829
PR	0.683157
TR	0.599478

Source(s): Table by authors

**Table 4.**  
Table  $R$ -square



Communication and Information Technology Regulations, Bank Indonesia Regulations and Financial Services Authority Regulations) that have been implemented in Indonesia are considered capable of protecting consumers' rights (Benuf, Mahmudah, & Priyono, 2019).

Furthermore, the test results reveal that the perceived benefits have a positive effect on trust and the perceived risks show a negative effect on trust. Based on the test results, the effect of these two variables has the same value. So, it can be said that SMEs that use fintech pay attention in a balanced way to the benefits and risks of fintech. The explanation is that when SMEs entrust their transaction activities to fintech, they will consider the benefits and risks in parallel. This finding is in line with the previous studies Ali *et al.* (2021) and Park, Amendah, Lee, and Hyun (2018). At the same time, the individual's intention to continue using fintech is determined by trust. It means that the more SMEs that entrust their business transactions using fintech, the greater their intention to continue using fintech. Hence, trust is a very important factor in the decision to continue using fintech. This is in line with the previous studies Ali *et al.* (2021) and Park *et al.* (2018).

## 6. Theoretical and policy implications

This research contributes theoretical and practical implications for academics and management circles. The reason is that this research reveals the determinants of SMEs in deciding to continue using fintech through comprehensive variables regarding perceived benefits and perceived risks. In addition, this research can be the basis of a conceptual framework to carry out further research.

Apart from the theoretical implications, this research also contributes policy implications, especially for fintech managers so that they gain an understanding of users' intentions (in this case is SME actors) to continue using fintech. The current trend of SME activists is to use technology as a transaction facility. This is supported by the current trend of consumers who also prioritize cashless transactions. This research can provide advice to managers to develop efficient payment systems, lower payment fee and error-free transactions. In addition, the fintech management needs to understand the risks related to operational risks that are a challenge for the users to decide to use fintech so that a reliable mechanism for using fintech can be developed. Another implication is related to the sample selection method used by researchers enabling the data obtained to focus on SMEs that have used fintech so that it will be useful for fintech developing companies as a reference in knowing the factors that influence users in continuing to use fintech, this allows fintech developing companies in Indonesia will be even more developed and accelerate the achievement of the Sustainable Development Goals.

This study has several limitations. First, judgment sampling limits the strength and generalizability of these findings to Indonesia only. In addition, variable indicators in this study lead to certain purposes, so it can be proposed for further research using other perceived benefit and perceived risk factors to explain customer decisions (SME actors) to continue using fintech.

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