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*by* Hotlan Siagian

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## The effect of perceived security, perceived ease of use, and perceived usefulness on consumer behavioral intention through trust in digital payment platform

Hotlan Siagian<sup>a</sup>, Zeplin Jiwa Husada Tarigan<sup>a\*</sup>, Sautma Ronni Basana<sup>a</sup> and Ribut Basuki<sup>b</sup>

<sup>a</sup>Faculty of Economics and Business, Petra Christian University, Indonesia

<sup>b</sup>Faculty of Humanities and Creative Industry, Petra Christian University

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### ABSTRACT

This study investigates the application of the technology acceptance model (TAM) on the digital payment using social media platforms with the extended inclusion of perceived ease of use, perceived security, perceived usefulness, and trust in enhancing consumer behavioral intention. This work has surveyed 250 consumer films on the digital social media platform. Data collection used a questionnaire designed with a five-point Likert scale. The questionnaire was created using a Google Form, and questionnaire distribution was performed by sending the link through social media to the respondents. As many as 300 questionnaires were distributed, and 258 questionnaires were considered valid for further analysis. Data analysis used smartPLS software version 3.0. The result revealed that nine hypotheses were empirically supported while the others two were not supported. Perceived security directly affects trust and consumer behavioral intention. Perceived ease of use directly affects perceived usefulness and consumer behavioral intention. Perceived security indirectly influences consumer behavioral intention through trust and perceived usefulness. Furthermore, perceived usefulness directly affects trust and consumer behavioral intention. Besides, trust directly affects consumer behavioral intentions. Perceived ease of use indirectly affects behavioral intention through perceived usefulness. Moreover, perceived security affects consumer behavioral intentions indirectly through trust. Perceived ease of use influences perceived usefulness. However, perceived usefulness did not indirectly influence behavioral intention through trust. Finally, perceived ease of use did not affect consumer behavioral intention through perceived usefulness and trust. These findings extended the application of the technology acceptance model in using digital payment platforms in Indonesia. These findings reinforced current research on user adoption of new technology. Furthermore, this result provides a managerial implication for digital payment platforms providers to improve consumer behavioral intentions.

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### 1. Introduction

The COVID-19 pandemic has now spread all over the planet. In March 2020, the COVID-19 virus infected at least 69 countries, with Indonesia being one of them. This epidemic has triggered a global economic crisis, particularly in Indonesia. The Indonesian government has implemented a social and physical distancing (the new normal) known as Large-Scale Social Restrictions. This policy challenges the community and businesses to devise solutions that allow them to continue their daily lives and conduct business while adhering to government policies. One of the most effective methods is information technology, enabling people to do activities and conduct business while still adhering to government laws. People in the online business world see this as a fantastic chance to help the community stay engaged while avoiding the spread of the COVID-19

\* Corresponding author:

E-mail address: mohammed.nuscir@anu.ac.ac (M. T. Nuscir)

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virus. Furthermore, the proliferation of internet connections, better networks, technological innovation, and the availability of smart gadgets have resulted in the creation of OTT (over the top) services, which provide services to users directly through the Internet (Gupta & Singharia, 2021). The use of this digital payment app reduces the danger of being infected with the COVID-19 virus. Cashless digital payments via smartphone apps such, particularly during pandemics. Digital payment applications are used to process payments (Tarigan et al., 2022). This is far more convenient than using a credit card.

However, some people are still skeptical about using an e-wallet. On the other hand, others have trusted and used this e-wallet to help them with their daily tasks. This issue demonstrates that the public purpose or desire to use non-cash payments must be improved for individuals to be willing to use them. Using digital payment applications has recently shifted user behavior, prioritizing the health component over the promotional aspect during this pandemic (Tarigan et al., 2022). The existence of the COVID-19 epidemic has undergone tremendous growth, one of Indonesia's digital payment applications, with a 267 percent increase in new users compared to the time before the PSBB in numerous Indonesian cities. Indonesia. The question raised is whether the users trust the digital payments they use, whether they give a valuable experience for their users, and whether they will use the digital application regularly after the first time they use it.

Previous research indicated that privacy, access speed, security, content, design, perceived benefits, trustworthiness, and ease of use are all factors that influence user (consumer) behavioral intention to use digital payment services (Revathy & Balaji, 2020). There have been numerous scams in the company digitization process and e-commerce applications, privacy and security (perceived security) damage trust users. In terms of access speed and design, the consumer places a high value on perceived usefulness. Business owners working in the worlds of digitalization and commerce take these considerations into account as well. In Taiwan and Vietnam, Krishnan & Koshy (2021) found that perceived usefulness influences consumer behavioral intentions to buy electric cars. Perceived usefulness, perceived ease of use, and perceived enjoyment can influence consumer behavioral intention on information technology systems (Zhang et al., 2014; Basuki et al., 2022). Security, trust, and the benefits achieved are the primary elements determining consumer behavioral intention to use digital payment applications. The technology acceptance model (TAM), which includes perceived ease of use, perceived enjoyment, and perceived usefulness, has an impact on consumer behavioral intention to use of 68 respondents in using the internet of things on electronic toll collection (ETC) in China (Gao & Bai, 2014). Hubert et al. (2019) investigated the technology acceptance model (TAM) on smart home applications against 409 respondents. According to the study, perceived ease of use had a negative and minor effect on behavioral intention, whereas perceived usefulness influenced consumer behavioral intention. Perceived usefulness, perceived simplicity of use, and perceived enjoyment can impact behavioral intention, according to an information technology system utilized (Zhang et al., 2014; Basuki et al., 2022). Besides, Merhi et al. (2019) found that trust had a beneficial impact on consumer behavioral intentions to utilize mobile banking. Furthermore, Khan et al. (2021) demonstrated that perceived security is a predictor of trust. Users' feelings of security will determine their level of faith in technology. Meanwhile, technology consumers will have faith in technology if they believe that technology they are using is advantageous to them.

Perceived ease of use is another factor that indicates the level of ease of use in the user's mind (Palumian et al., 2021). The user will not intend to use technology when the user perceives that the technology requires a big effort. Previous research also indicated that perceived ease of use increases the intention to use e-Government di Indonesia (Susanto & Aljoza, 2015). This study was conducted by surveying 40 users of public e-service in the Immigration services department.

Based on the above discussion, it appears that Technology Acceptance Model (TAM) theory can be used in numerous industries as long as it is related to using the latest technology, as evidenced by past studies. It has been indicated that the initial technology acceptance model has developed perceived security, perceived ease of use, perceived usefulness, and trust are all of which influence consumer (user) behavioral intention. However, the previous research merely stated the association between two elements in isolation. This study creates a model to investigate the impact of perceived security, perceived ease of use, and perceived usefulness on consumer behavioral intention through trust in digital payment apps. This study seeks the acceptance of the technology acceptance model (TAM) by involving additional constructs, i.e., trust and perceived security, which are considered essential in the financial transaction involved. Furthermore, this study also seeks the acceptance of the research model in the context of digital payment in Indonesia. This research model generated three concerns that must be addressed in this study: 1) whether perceived security and perceived usefulness affect trust and consumer behavioral intention; and 2) whether perceived security, perceived ease of use, perceived usefulness, and trust affect consumer behavioral intention; and 3) whether perceived security and perceived usefulness have an indirect effect on consumer behavioral intention through trust. This study is considered necessary in the current new technology such as digital payment to seek how the user is interested in using the technology. The result of this study could provide an insight on how to design the application to attract the user's intention to use.

The following order describes how this paper is organized. First, the theories relating to the research constructs and the construction of hypotheses are discussed in Section 2. The research methodology is then described in section 3, followed by the results of data analysis in section 4, a discussion of the analysis results in section 5, and lastly, the study's conclusions in section 6.

## 2. Literature review

### 2.1 Technology Acceptance Model (TAM)

Davis (1989) established the Technologies Acceptance Model (TAM) to describe how users will embrace new technology. TAM is based on the Theory of Reasoned Action (TRA), but Davis does not use all of the theory's components. On the other hand, Davis only utilizes the components "Belief" and "Attitude" because he believes that the behavior of using information technology begins with a perception of its usefulness and simplicity of use. To date, the TAM model has been routinely employed to anticipate information technology uptake (Palumian et al., 2021). This model seeks to explain the primary elements that influence information technology users' behavior toward adopting the technology itself. Furthermore, a study by (Venkatesh & Davis, 2000) has extended the theoretical technology acceptance model called TAM2. As discussed above, TAM by David proposed the antecedent of the usage behavior are perceived ease of use, perceived usefulness, and intention to use. However, the research of Venkatesh & Davis (2000) proposed that before the perceived ease of use and perceived usefulness, other antecedent factors affect it, namely, subjective norm, image, job relevance, output quality, and result demonstrability. In addition, two factors moderate the relationship between subjective norm and perceived usefulness: experience and voluntariness. With the evolution of the model, TAM has been gradually extended to financial transactions. This extended application of the TAM is common with the introduction of new constructs that are considered essential based on the research context. For example, in the financial context, the security and trust are very important to make sure the cash transaction or investment is secured. As has been discussed in the introduction section, this study creates a model to investigate the impact of perceived ease of use, perceived usefulness, perceived security, and trust on the behavioral intention in the digital payment industry.

#### 2.1.1 Perceived Security

Users' major worry in terms of financial transactions will always be security services. Users' subjective likelihood that their personal information will not be accessed, stored, or manipulated illegally by others is defined as perceived security (Flavián & Guinalíu, 2006). Customers have been under the impression that digital payment systems are insecure because they can be hacked (Falk et al., 2016). As a result, one of the most significant issues consumers confront while using digital payment systems is their perception of security (C. Kim et al., 2010). As a result, perceived security can be defined as the prevention and anticipation of threats that have the potential to cause economic challenges by causing damage to data sources or networks, data gathering and manipulation, denial of service, fraud, and abuse of authority. At the same time, according to a study (Hartono et al., 2014), perceived security has four dimensions. In the beginning, secrecy refers to when improper information exposure can be predicted and avoided. Information leakage to unauthorized parties will be better anticipated and avoided with a system with superior secrecy. Second, integrity refers to the point at which unauthorized changes to data may be expected and avoided. Systems with a high level of integrity can predict and prevent data modifications or alterations, such as improper updates, deletions, or inappropriate additions. The presence of digital signatures and anti-virus applications is a popular technique to ensure data integrity. Third, the amount of information offered by the authorities is referred to as availability. A system with high availability will continually give useful information to authorities. Fourth, non-repudiation is a transaction between a buyer and a seller in which the system users ensure that the seller receives the information given by the consumer. Systems that are superior in non-repudiation can provide verifiable confirmation of identification. Digital signatures are a frequent security example for ensuring non-repudiation.

According to research conducted by Flavián and Guinalíu (2006), eight indicators can be used to measure perceived security, including 1) having a mechanism that ensures the security of transmitting user information, 2) demonstrating great concern for the security of each transaction, 3) having sufficient technical capabilities to ensure that no other organization will replace their identity, and 4) being confident, 5) be certain that unauthorized parties will not intercept the data I send; 6) have sufficient technical capabilities to ensure that hackers will not intercept the data I send; 7) believe that third parties will not change the data I send, and 8) have sufficient technical capabilities to ensure that third parties will not be able to modify the data I send. Therefore, this study will use these eight characteristics to assess perceived security.

#### 2.1.2 Perceived Usefulness

According to Venkatesh et al. (2003), the perceived usefulness of information technology in carrying out their jobs are the advantages of information technology. Perceived usefulness is a person's belief in using a specific system. As a result, perceived usefulness can be defined as a circumstance in which people believe that technology will help them accomplish their goals. If a person is aware of the advantages of using technology, they are more likely to use it. According to Davis (1989), five indicators evaluate perceived usefulness: 1) Work More Quickly: Adopting digital information technology in the workplace can positively impact performance, allowing information technology users to finish tasks more quickly. 2) Practical, The usage of information technology can bring many advantages that can assist users in carrying out their regular tasks. 3) Increase Productivity, Information technology users can manage and utilize resources effectively to produce more optimal results with the benefits of employing information technology in their daily operations. 4) Increase Effectiveness: Information technology may assist users in increasing their effectiveness by assisting them in achieving their goals at a lower cost and in



a shorter amount of time. 5) Improve Job Performance: Information technology users can use it to better their job performance in terms of quantity and quality by utilizing it to perform their duties and obligations. Davis' research was used to gauge perceived usefulness in this study.

### 2.1.3 Perceived Ease of Use

Perceived ease of use is defined as how an individual believes that using a particular information technology system would be free of effort. An application perceived to be easier to use than another is more likely to be accepted by users (Davis, 1989). Perceived ease of use is a person's level of belief that a system can be easily understood. Bassiouni et al. (2019) state that perceived ease of use is the ease of use felt by users in technological entertainment in video games. Perceived ease of use is defined as the ease of understanding and interacting with information technology systems used in restaurants (Zhang et al., 2014). A system on Facebook that is often used has an impact on being easy to understand, easier to operate, and easier to use (Rauniar et al., 2014). Perceived ease of use in cloud computing is that easier it is to perceive cloud computing, the more likely it is to adopt technological innovation (Ratten, 2014). The use and interaction between the user and the smart home system can show the level of ease of use (Hubert et al., 2019). Bassiouni et al. (2019) measure it using efficient video games, video games to be easy to use and easy-to-understand. Perceived ease of use information technology class is measured through interacting with the system (Tarigan et al., 2020). It does not require significant effort, and the system is easy to use as desired (Zhang et al., 2014). The indicators used by Ratten (2014) to measure the perceived ease of use of cloud computing are easy to use, learning to use cloud computing is easy, and learning how to use cloud computing quickly. The use of Facebook as a system for perceived ease of use is measured from Facebook being flexible in interacting, easy to make Facebook, easy to be skilled in using Facebook, Facebook is easy to use and interaction with Facebook clear and understandable (Rauniar et al., 2014). This study assesses perceived ease of use using four indicators, namely, 1) easy to use, 2) easy to understand, 3) easy to interact clearly, and 4) can be quickly use.

### 2.1.4 Trust

Competence, integrity, honesty, and kindness are all traits that influence trust. Trust is a party's belief in the other party's intentions and actions (Daabseh & Aljarah, 2021; Siagian & Cahyono, 2014). Research Customer trust in using digital payment instruments is defined by Kim et al. (2010) as consumer confidence that electronic transactions would be executed according to their expectations. Therefore, trust is defined as the expectation that a firm can be trusted to deliver its commitments. According to Kim et al. (2010), there are four indicators of trust: 1) trusting all parties involved in digital payment applications, such as sellers and buyers, 2) trusting digital payment application security mechanisms, 3) trusting digital payment application services, and 4) trusting information provided during the application process. Because it is more important to understand the relationship of trust as a mediating variable on behavioral intention, trust was measured in this study utilizing research from Kim et al. (2010).

### 2.1.5 Consumer Behavioral Intention

According to Warshaw and Davis (1985), consumer behavioral intention is a condition that describes the amount to which an individual has deliberately planned something to do or not do in the future. According to Zeithaml et al. (1996), behavioral purpose can lead to positive or negative outcomes. Positive reinforcement, improved business volume, positive commendation, and a willingness to pay a higher price are all common outcomes of good behavioral intentions. According to Zeithaml et al. (1996), behavioral intention comprises 1) word of mouth communication, informal communication between friends tends to be more persuasive because the message has no stake in the recipient's behavior. 2) recommending digital payment platforms to relatives. 3) Using digital payment platforms without any promo. 4) Price Sensitivity is the attitude or sentiment of a customer willing to pay the company's price for the desired goods. 5) The probability of consumers being interested in purchasing a given product is characterized as repeat purchasing. Repurchase behavior is commonly confused with brand loyalty, but the two are not synonymous. 6) Customer Loyalty: Customer loyalty is defined as a customer's desire to utilize a company's products or services in the long run and to promote them to others. Because it is more relevant to the present pandemic conditions, the behavioral intention is assessed in this study utilizing research by Zeithaml et al. (1996).

## 2.2. Relationships Between Concepts

### 2.2.1 Perceived Security and Trust

There is a link between perceived security and trust. Users' trust will be lost if companies cannot ensure the security of personal data, such as information leaks or information that outsiders can view. According to Khan et al. (2021), perceived security is an antecedent of trust. According to this study, the level of trust in E-Government in Pakistan is determined by perceived security. Therefore, there is a link between consumer security and their trust in a product or service. One aspect that impacts trust in Wechat pay users in China is perceived security (Sarkar et al., 2020). The first hypothesis can be stated as follows, based on the above study.

**H<sub>1</sub>:** *Perceived security has a significant effect on trust.*

### 2.2.2 Perceived ease of use and perceived usefulness

A study using a general extended technology acceptance model for E-Learning (GETAMEL) in the context of e-portfolios with the survey of 242 UK undergraduate students who had been introduced to e-portfolios indicated that perceived ease of use affects perceived usefulness (Abdullah et al., 2016). Moreover, a study by Davis (1989) indicated that perceived ease of use is a determinant of perceived usefulness. Furthermore, research by Yusoff et al. (2009) suggested that perceived ease of use influences perceived usefulness. Perceived ease of use positively impacts perceived usefulness in 389 respondents students who use Facebook caused by easy-to-use Facebook, and interactions through Facebook are easy to understand (Rauniar et al., 2014). Perceived ease of use when having a smart home influences perceived usefulness due to the ease of using a smart home, and the ease of operating it provides life easier and more profitable (Hubert et al., 2019). Perceived ease of use impacts perceived usefulness in using cloud computing (Ratten, 2014). Finally, perceived ease of use positively affects perceived usefulness in Korean consumer sports and fitness wearable devices (Kim & Chiu, 2019). Based on this argument, the following hypothesis is formulated.

**H<sub>2</sub>:** *Perceived ease of use affects perceived usefulness.*

### 2.2.3 Perceived Usefulness and Trust

There is a link between perceived usefulness and trust. Consumer trust in utilizing web-based digital payment systems is directly and strongly influenced by perceived security, privacy, the convenience of use, and usefulness (Casalo et al., 2007). According to Mou et al. (2017), consumer trust is significantly impacted by online-based services' perceived usefulness. Perceived usefulness and perceived ease of use were significant determinants of consumer trust (Amin et al., 2014). Yudiarti and Puspaningrum (2018) found that perceived usefulness influences trust and that trust mediates the effect of perceived usefulness on consumer behavioral intention. This argument establishes a link between the benefits of a product or service and consumer faith in it. This argument proposes the third hypothesis as follows.

**H<sub>3</sub>:** *Perceived usefulness affects trust.*

### 2.2.4 Trust and Consumer Behavioral Intention

One of the main reasons people have not shopped online or submitted personal information to digital payment applications (Tarigan et al., 2022). Trust in online transactions that require customers to provide information and customer satisfaction (Daabseh & Aljarah, 2021; Hoffman et al., 1999). Customers must be informed about a company's data gathering procedures and rules for the relationship to succeed (Tarigan et al., 2020). On the other hand, customers must be willing to share personal information for the organization to develop customer connections. (Borhan et al., 2019) found that trust had a beneficial impact on the intention to use high-speed rail (HSR) in Libya. Other studies in Beijing, China, show that trust impacts the adoption of automated vehicles (Dirsehan & Can, 2020). According to Merhi et al. (2019), trust affects consumer behavioral intentions to use mobile banking. Finally, a study of mobile banking users in Jakarta, Indonesia, found that whether or not customers will continue to use the service is determined by their level of trust (Maureen Nelloh et al., 2019). The third hypothesis can be stated as follows, based on the preceding arguments:

**H<sub>4</sub>:** *Trust has a significant effect on consumer behavioral intention.*

### 2.2.5 Perceived Ease of Use and Consumer Behavioral Intention

Previous research indicated that perceived ease of use increases the intention to use e-Government in Indonesia (Susanto & Aljoza, 2015). This study was conducted by surveying 40 public e-services in the Immigration services department. Other research also shows that perceived ease of use determines the intention to use social commerce in social media. (Renny et al., 2013) concluded that perceived ease of use constitutes one of the determinants of the intention to use on the electronic passengers ticketing in the Airport. However, another study in Thailand with 430 participants concluded that ease of use did not affect consumer behavioral intention on E-Marketing (Kanchanatane et al., 2014). Based on the description, this study proposes the fifth hypothesis.

**H<sub>5</sub>:** *perceived ease of use affects consumer behavioral intention.*

### 2.2.6 Perceived Security and Consumer Behavioral Intention

Chiu et al. (2009) found a link between the two. Consumers' behavioral intentions are influenced by their perceptions of security since perceived security is one of the key reasons many potential customers are hesitant to shop online or use digital payment applications (cashless). According to Mombeuil and Uhde (2021), in China, perceived security influences the inclination to use Wechat Pay. Klobas et al. (2019) found that a person's perception of security risk influences their propensity to use smartphones. Another study by Merhi et al. (2019) found that perceived security influences behavioral intentions in Lebanon and the United Kingdom in mobile consumer banking. The findings of Sudono et al. (2020) also show that in Surabaya,

Indonesia's perceived security influences the propensity to use mobile payments. This study proposes, based on the preceding considerations, that the sixth hypothesis:

**H<sub>6</sub>:** *Perceived security has a significant effect on consumer behavioral intention.*

### 2.2.7 Perceived Usefulness and Consumer Behavioral Intention

TAM has a purpose that determines the adoption of behavior that is planned to employ information system technology (Davis, 1989; Palumian et al., 2021). Information systems or applications would be more likely to be accepted by users in the future (Tarigan et al., 2020). Krishnan & Koshy (2021) research demonstrates that perceived usefulness increases consumer behavioral intention to acquire electric cars in Taiwan and Vietnam. The perceived usefulness of a massive open online course (MOOC) influenced the desire to use it, according to a study conducted on nurses in Portugal (Krishnan & Koshy, 2021). Another survey on self-service technologies at the Kuala Lumpur International Airport by (Taufik & Hanafiah, 2019) found that perceived usefulness influences consumer behavioral intention. In Beijing, China, perceived usefulness is critical in persuading someone to utilize an autonomous vehicle (Dirsehan & Can, 2020). According to research on the adoption of e-Government in the Netherlands, trust is the most important factor in determining whether or not e-Government services are accepted (Horst et al., 2007). Based on the above reasoning, the seventh hypothesis can be stated as follows.

**H<sub>7</sub>:** *Perceived usefulness affects consumer behavioral intention.*

## 2.3 Indirect hypotheses development

### 2.3.1 Perceived Security and Consumer Behavioral Intention through Trust

The development of trust might alter consumers' intents to buy, according to (Flavián & Guinaliú, 2006). Perceived security has a relationship with behavioral intention through trust. However, consumers' perceptions of the security of their personal information have an impact on trust. According to another survey conducted by C. Kim et al. (2010), most consumers prefer to use cash as a transaction tool because they lack trust in the security of online-based transaction services. According to the findings, trust is a mediator of perceived security on customers' behavioral intentions. Research conducted on electronic medical records in Malaysian hospitals, perceived security influences behavioral intention through trust (Enaizan et al., 2020). The hypothesis H8 can be expressed as follows based on this discussion.

**H<sub>8</sub>:** *Perceived security influences consumer behavioral intention through trust.*

### 2.3.2 Perceived Usefulness and Consumer Behavioral Intention through Trust

Perceived usefulness influences consumer behavioral intention through trust, (Chen & Barnes, 2007; Basuki et al., 2022). Perceived usefulness, perceived security, and perceived privacy all affect varying levels of trust. Consumers with a high level of trust are more likely to buy a product or service. Thus, we can observe from the research that trust is a mediator of perceived usefulness on customers' behavioral intentions. According to Singh & Sinha (2020), perceived usefulness influences consumer behavioral intention indirectly through trust. In the previous studies, as discussed in the relationship of perceived usefulness, it was formulated that perceived usefulness directly affects trust (Casalo et al., 2007; Mou et al., 2017; Yudiarti & Puspaningrum, 2018). On the other hand, previous studies conclude that trust directly influences consumer behavioral intention (Borhan et al., 2019; Dirsehan & Can, 2020; Maureen Nelloh et al., 2019; Merhi et al., 2019). Based on these two premises that perceived affects trust, and trust affects consumer behavioral intention, we can postulate hypothesis H9 as follows.

**H<sub>9</sub>:** *Perceived usefulness affects consumer behavioral intention through the mediation of trust.*

### 2.3.3 Perceived ease of use influences consumer behavioral intention through perceived usefulness

Another indirect hypothesis is also determined based on the same logic in formulating a hypothesis (H9). As it has been discussed, perceived ease of use directly affects the perceived usefulness according to previous studies (Abdullah et al., 2016; Davis, 1989b; Hubert et al., 2019; T. Kim & Chiu, 2019; Ratten, 2014; Rauniar et al., 2014; Yusoff et al., 2009; Basuki et al., 2022). Furthermore, perceived usefulness directly affects consumer behavioral intention, as suggested by (Dirsehan & Can, 2020; Horst et al., 2007; Taufik & Hanafiah, 2019). Then, hypothesis H10 can be derived based on these two direct hypotheses.

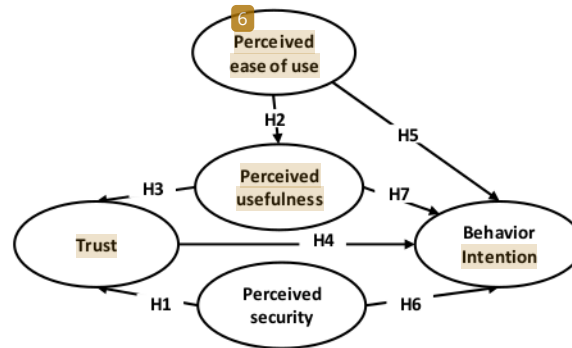
**H<sub>10</sub>:** *Perceived ease of use influences consumer behavioral intention through perceived usefulness.*

The last indirect hypothesis is formulated following similar reasoning with the previous indirect hypothesis. Since perceived ease of use affects perceived usefulness (Abdullah et al., 2016; Davis, 1989b; Hubert et al., 2019; Ratten, 2014; Rauniar et al., 2014; Yusoff et al., 2009), perceived usefulness affects trust (Amin et al., 2014; Casalo et al., 2007; Mou et al., 2017; Yudiarti & Puspaningrum, 2018), and trust affects consumer behavioral intention (Borhan et al., 2019; Dirsehan & Can, 2020; Hoffman et al., 1999; Maureen Nelloh et al., 2019; Merhi et al., 2019), then we derive the last hypothesis (H11) as follows.



**H<sub>11</sub>:** *Perceived ease of use affects consumer behavioral intention through perceived usefulness and trust.*

The relationship of those constructs and hypotheses developed is summarized in a research framework depicted in Fig. 1.



**Note.** Indirect relationships (H8 and H11) are not shown on the Figure.

**Fig. 1.** Research Framework and Hypotheses

### 3. Methodology

#### 3.1 Population and Sample

Quantitative research was utilized to evaluate causality links between constructs to test hypotheses developed previously. The respondents in this study are consumer streaming film on the digital social media platform, likely viewers on Netflix, Viu, Goplay, HBO Go, IndiHome. Data collection used a questionnaire designed with a five-point Likert scale with 1: strongly disagree and 5: strongly agree. The questionnaire was created in Google Form, and the link was used to distribute to 300 predetermined respondents using social media. Calculations utilizing the finite population approach yielded a minimum sample size of 250 responders as a minimum required sample. Thus, the number of valid respondents to be analyzed according to the survey results is 258. The questionnaire was designed using a five-point Likert scale to measure the indicators of each variable. Partial Least Squares (PLS) with SmartPLS version 3.0 was used to analyze the data. The analysis is performed in two stages, namely, outer model and inner model analysis. The outer model evaluation assesses the validity and reliability of the indicators of each variable, while inner model analysis investigates the hypotheses of the study.

### 4. Analysis and finding

#### 4.1 Validity and Reliability Test

This study used structural equation modelling – partial least square (SEM-PLS) to analyze the research data using SmartPLS software version 3.0. The first step to conduct confirmatory factor analysis of the variable indicators by looking at the validity and reliability of the indicators. The convergent and discriminant validity tests are the two types of validity tests used in this investigation. The factor loading was assessed on each indicator to test the convergent validity and the Fornier-Larcker criterion is used to assess the discriminant validity. The analysis result is demonstrated in Table 2.

**Table 2**

Mean, Standard deviation, factor loading, and outer VIF

Item	Description	Mean	Standard Deviation	Factor Loading	Outer VIF
<b>Consumer Behavioral Intention</b>					
BI1	Saying positive things about digital payments	4.41	0.743	0.691	1.620
BI2	Recommending digital payment applications	4.33	0.756	0.746	1.895
BI3	Using digital payment applications without promos	3.97	0.947	0.747	2.005
BI4	I am using payments digital for an additional fee.	3.79	0.952	0.734	1.885
BI5	I am using digital payments in the future.	4.45	0.658	0.846	2.640
BI6	I am using digital payments in the long term.	4.49	0.628	0.834	2.466
<b>Perceived Security</b>					
PS1	Payment information transmission is secure	3.97	0.947	0.718	1.955
PS2	Payments in each transaction are secure.	4.32	0.711	0.686	3.629
PS3	The transaction is protected from hacking	4.21	0.772	0.653	4.173
PS4	Digital is safe when using the internet	4.07	0.865	0.793	2.322
PS5	Unauthorized parties will not intercept data.	4.03	0.879	0.729	2.853
PS6	Digital payments are safe from hacking	3.94	0.883	0.850	4.034
PS7	Data sent cannot be changed by third parties.	4.14	0.812	0.680	2.156
PS8	Data sent cannot be modified by others.	4.23	0.753	0.673	1.980



**Table 2**

Mean, Standard deviation, factor loading, and outer VIF (Continued)

Item	Description	Mean	Standard Deviation	Factor Loading	Outer VIF
<b>Perceived usefulness</b>					
PU1	Digital payments more quickly complete work	4.39	0.740	0.578	1.323
PU2	Digital payment applications is very helpful	4.39	0.726	0.761	2.276
PU3	Digital payment applications simplify the transaction	4.53	0.747	0.826	2.753
PU4	Digital payment apps give me a lot of benefits.	4.56	0.642	0.751	2.363
PU5	Digital payment applications increase productivity	4.08	0.991	0.785	2.900
PU6	Digital payment applications increase cost-efficiency	4.29	0.873	0.785	2.475
PU7	Digital payment applications increase time efficiency	4.37	0.853	0.821	2.983
PU8	Digital payment applications improve work performance	4.12	0.955	0.761	2.602
PU9	Digital payment applications complete many activities	4.22	0.911	0.795	3.046
<b>Trust</b>					
T1	All parties involved in transactions are trusted	4.38	0.695	0.836	1.832
T2	The security of the digital transactions is trustworthy	4.40	0.620	0.745	1.761
T3	The service of digital payment t is trusted	4.36	0.578	0.704	1.563
T4	The information provided on processes is trusted	4.36	0.676	0.756	1.544
<b>Perceived Ease of Use</b>					
PEU1	Ease to use	4.07	0.777	0.726	1.739
PEU2	Easy to understand	4.10	0.681	0.925	3.652
PEU3	Easy to interact clearly	4.01	0.806	0.838	2.771
PEU4	Application can be used quickly	3.83	0.787	0.785	1.949

According to Table 2, all outer loading values are greater than 0.50. As a result, all indicators are considered valid in convergent validity (Hair et al., 2019). In addition, the value of the outer variance inflation factor (VIF) addresses the collinearity between indicators, with the VIF value requirement being less than 5.0 (Hair et al., 2019). The result indicated that VIF is in the range of 1.323 – 4.034, which implies that those indicators satisfy the VIF requirement values. Moreover, the discriminant validity testing is also performed using the Fornier-Larcker criterion shown in Table 3.

**Table 3**

Discriminant Validity

	2 Consumer Behavioral Intention	Perceived Ease of Use	Perceived Security	Perceived usefulness	Trust
Consumer Behavioral Intention	<b>0.768</b>				
Perceived Ease of Use	0.740	<b>0.822</b>			
Perceived Security	0.687	0.476	<b>0.725</b>		
Perceived usefulness	0.675	0.599	0.399	<b>0.766</b>	
Trust	0.725	0.604	0.651	0.455	<b>0.762</b>

Table 3 shows that there is good discriminant validity based on the Fornier-Larcker criterion. The AVE square root of each variable (bold writing) is always greater than the correlation value across variables. As a result, all indicators match the criterion and are declared valid (Fornell & Larcker, 1981). The value of composite reliability, rho A, Cronbach's, and AVE are used in reliability testing. If the composite reliability, Cronbach's Alpha, exceeds 0.70 and the AVE value is greater than 0.50, the reliability criteria are met (Hair et al., 2019). Table 4 demonstrates that all of the variables employed in this study have composite reliability and Cronbach's Alpha and rho A values that are all more than 0.7. In addition, the value of the average variance extracted (AVE) is > 0.50. As a result, this study's indicators are considered reliable, and further inner model evaluation can proceed.

**Table 4**

Reliability

	Cronbach's Alpha	rho A	Composite Reliability	AVE
Consumer Behavioral Intention	0.860	0.863	0.896	0.590
Perceived Ease of Use	0.836	0.841	0.892	0.675
Perceived Security	0.871	0.880	0.898	0.526
Perceived usefulness	0.911	0.915	0.927	0.586
Trust	0.762	0.777	0.846	0.580

#### 4.2 Inner Model Evaluation

Fig. 2 illustrates the research model and the result of model evaluation using the SmartPLS 3.0 software.

**Table 5**

R square and Q square values

	R Square	Q Square
Consumer Behavioral Intention	0.772	0.433
Perceived usefulness	0.358	0.179
Trust	0.470	0.261

The independent variable ability to explain the variance of the dependent variable is reflected by the coefficient of determination ( $R^2$ ). At the same time, the Q square ( $Q^2$ ) is employed to determine the study model's predictive relevance. The coefficient of determination and predictive relevance are shown in Table 5.

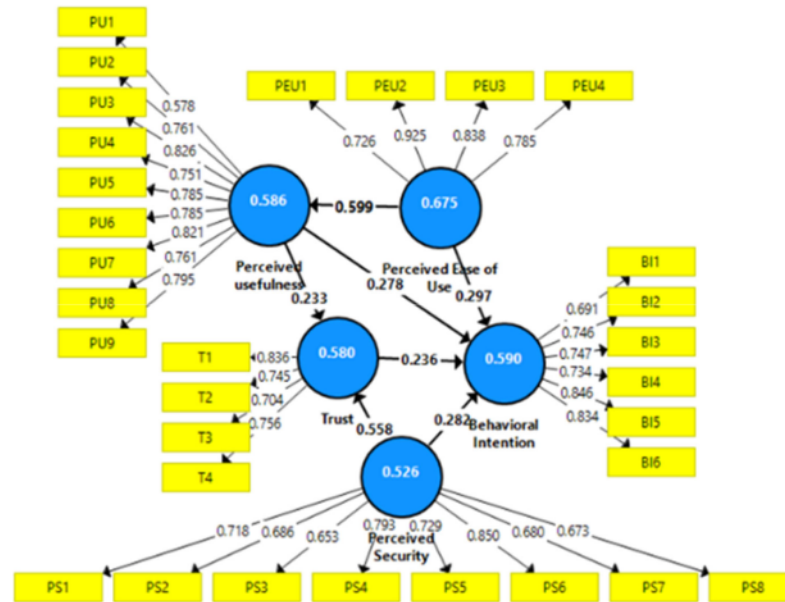


Fig. 2. Research Model and Analysis Results  
R Square and Q square

The coefficient of determination of the consumer behavioral intention is 0.772. This result suggests that 77.20% of the variance of consumer behavioral intention is explained by the variance of perceived ease of use, perceived security, perceived usefulness, and trust simultaneously. In contrast, the rest of the variance is explained by other variables. Furthermore, the value of the trust's coefficient of determination is 0.470, suggesting that trust variance is explained 47.0% by perceived security and perceived usefulness simultaneously. Moreover, perceived usefulness has an R square value of 0.358, suggesting that perceived ease of use explains the variance of perceived usefulness up to 35.8%. The criteria for the  $R^2$  values have been proposed by (Chin, 1998) with the value categorized unacceptable below 0.19, low 0.19–0.33, moderate 0.33–0.67, and good at 0.67 or more. The result in Table 5 indicated the  $R^2$  value of 0.358, 0.470, and 0.772, which are moderate and good levels. Table 5 also indicated the value of Q square for each endogenous construct, namely, consumer behavioral intention, perceived usefulness, and trust. Since the Q square value for each construct is greater than zero, the research model has an excellent predictive relevance. According to (Hair et al., 2017), the value of  $Q^2$  greater than zero indicates that the model has an excellent predictive relevance. Therefore, the research model involving the five constructs has good predictive relevance. Finally, Goodness-of-fit (GoF) in PLS-SEM has no standard statistic like in CB-SEM. The calculation of goodness of fit (GoF) uses the square root of multiplication between the mean of the determination coefficient ( $R^2$ ) and AVE (Henseler & Sarstedt, 2013), as shown in Equation (1). The mean value of  $R^2$  is 0.533, obtained from Table 5, and the mean value of AVE is 0.591, obtained from Table 4. The result of the GoF calculation using Equation 1 gives 0.561, which is a good fit ( $> 0.36$ ) (Tenenhaus et al., 2005).

$$\text{GoF} = \sqrt{R^2 \times \text{AVE}} = \sqrt{0.533 \times 0.591} = 0.561 \quad (1)$$

#### 4.3 Hypothesis Testing

The strength and nature (negative or positive) of the influence between variables are determined by path coefficients. The t-statistic value, on the other hand, indicates whether or not the effect is significant. The path coefficient values from this investigation and the t statistic are shown in Table 6. Table 6 reveals that all seven hypotheses are empirically supported since the t statistics value exceeds 1.96 for a significant level of 5%. Therefore, hypothesis H1 is accepted, in which perceived security has a considerable impact on the consumer behavioral intention with t-statistics values of  $6.326 > 1.96$ . Perceived ease of use positively influences perceived usefulness (H2) with a t value of  $11.16 > 1.96$ . Perceived usefulness positively affects trust (H3) with a t value of  $2.762 > 1.96$ . Further, the result also indicated that trust positively affects consumer behavioral intention (H4) with a t value of  $2.531 > 1.96$ . Perceived ease of use also positively influences consumer behavioral intention (H5), with a t value of  $4.627 > 1.96$ . Moreover, perceived security positively affects consumer behavioral intention

(H6) with a  $t$  value of  $2.816 > 1.96$ . Finally, perceived usefulness positively affects consumer behavioral intention (H7) with a  $t$  value of  $2.959 > 1.96$ .

**Table 6**

Direct Path Coefficient and T statistics

Direct Relationship	Path Coefficient	T Statistics	P Value
Perceived Security → Trust (H1)	0.558	6.326	0.000
Perceived Ease of Use → Perceived usefulness (H2)	0.599	11.166	0.000
Perceived usefulness → Trust (H3)	0.233	2.762	0.005
Trust → Behavioral Intention (H4)	0.236	2.430	0.015
Perceived Ease of Use → Behavioral Intention (H5)	0.297	4.627	0.000
Perceived Security → Behavioral Intention (H6)	0.282	2.817	0.006
Perceived usefulness → Behavioral Intention (H7)	0.278	2.959	0.002

Besides direct relationships, this study also proposed indirect relationships between constructs, and the analysis result is demonstrated in Table 7.

**Table 7**

Specific Indirect Path Coefficient and T Statistics

Indirect Relationship	Path Coefficient	T Statistics	P-value
Perceived Security → Trust → Consumer Behavioral Intention (H8)	0.139	2.263	0.024
Perceived usefulness → Trust → Consumer Behavioral Intention (H9)	0.061	1.686	0.092
Perceived Ease of Use → Perceived usefulness → Consumer Behavioral Intention (H10)	0.164	2.682	0.007
Perceived Ease of Use → Perceived usefulness → Trust → Consumer Behavioral Intention (H11)	0.037	1.620	0.105

There are four indirect hypotheses proposed in the literature review, and two of them were supported while the other two were not supported. First, perceived security positively influences consumer behavioral intent through the mediating role of trust (H8) with a  $t$  value of  $2.358 > 1.96$ . Secondly, Perceived ease of use indirectly affects consumer behavioral intention through perceived usefulness (H10) with a  $t$  value of  $2.624$ . However, Perceived usefulness did not affect consumer behavioral intention through trust with a  $t$  value of  $1.722 < 1.96$ . In addition, Perceived ease of use did not affect consumer behavioral intention through perceived usefulness and trust with a  $t$  value of  $1.652 < 1.96$ .

**Table 8**  
Total effect between constructs

	Consumer Behavioral Intention	Perceived usefulness	Trust
Perceived Ease of Use	0.496	0.599	0.139
Perceived Security	0.414		0.558
Perceived usefulness	0.333		0.233
Trust	0.236		

Table 8 shows the analysis result on the total impact between research constructs. This result indicated that perceived ease of use affects most significantly consumer behavioral intention followed by perceived security, perceived usefulness, and trust. Therefore, perceived ease of use becomes the first focus of the application provider to improve consumer behavioral intention.

## 5. Discussion

The results of the investigation suggest that the perceived security influences trust. The perceived security of digital payment applications is strong enough to influence trust among consumers who use them. The findings of the descriptive analysis demonstrate that the average value of all perceived security indicators is very high. The category also includes the average value of the mean of all trust indicators, which is high. As a result, respondents believe that the perceived security of digital payment applications is fairly strong and matches expectations, putting consumers' trust in digital payment apps in the very high category. The findings of this study are consistent with those of prior investigations (Khan et al., 2021; Sarkar et al., 2020). According to this study, customers' perceptions of security have a substantial impact on their trust. Respondents who feel that other parties would not intercept their data will trust the security mechanism of digital transactions. Moreover, perceived ease of use implies that the digital payment user believes that the platforms require no significant effort to understand and use the applications. When the users perceive that it is easy to use the application, they will believe that the application will benefit from using it. This study proved that perceived ease of use increases the perceived usefulness of digital payment platforms. The previous studies also are in line with this finding (Abdullah et al., 2016; Davis, 1989b; Hubert et al., 2019; T. Kim & Chiu, 2019; Ratten, 2014; Rauniar et al., 2014; Yusoff et al., 2009).

Furthermore, the finding revealed that perceived usefulness has an effect on trust. As a result, it can be concluded that the perceived usefulness of using digital payment applications is significantly persuading trust consumers to use them. The findings of this study are in line with those of earlier investigations (Casalo et al., 2007; Mou et al., 2017; Yudiarti & Puspangrum, 2018a). According to these findings, perceived usefulness has a major impact on user trust in digital payment platforms. Furthermore, respondents believe that utilizing digital payment applications increases their work performance and



trusts all parties involved in digital transactions. Also, the results of the investigation suggest that the variable trust affects consumer behavioral intention. It can also be seen in the descriptive analysis results, which demonstrate that the average value means of all indicators <sup>3</sup> if trust is very high, and the average value mean of all indications consumer behavioral intention is very high. As a result, it can be concluded that respondents have a high level of trust in digital payment applications, implying that customers have consumer behavioral intentions to utilize them. The findings of this investigation corroborate prior research. (Borhan et al., 2019; Dirsehan & Can, 2020; Hoffman et al., 1999; Maureen Nelloh et al., 2019; Merhi et al., 2019). Respondents who trust the security procedures, services, and information that exist in the digital transaction process will be interested in using digital payment applications, according to one reading of the phrase above. Besides, the analysis result revealed that perceived ease of use does affect the consumer behavioral intention of the digital payment platforms. This finding supports the previous research that when the use of technology is perceived <sup>2</sup> ease by the user, then the user will have the intention to use it and also forward the message to other user candidates (Kanchanatane et al., 2014; Renny et al., 2013; Susanto & Aljoza, 2015). Hence, the digital payment application owner needs to improve the perceived ease of use by enhancing the indicators of perceived ease of use such as easy to use, easy to understand, easy to interact and can use the application quickly.

Other findings suggest that the perceived security affects consumer behavioral intention. Consumers' intention to utilize digital payment applications are influenced by perceived security. The findings corroborate those of prior research (Chiu et al., 2009; Klobas et al., 2019; Merhi et al., 2019; Mombeuil & Uhde, 2021). Respondents who believe the digital payment application utilized is secure in processing information will speak positively about and advocate the usage of digital payment applications. Also, this study revealed that perceived usefulness affects consumer behavioral intention. Respondents believe that the perceived usefulness of digital payment applications is quite high and satisfies their expectations. The findings of this study corroborate those of prior studies (Davis, 1989b; Dirsehan & Can, 2020; Horst et al., 2007; Krishnan & Koshy, 2021). On the other hand, the result of this study also proved that perceived security impacts consumer behavioral intention through trust. When a user perceives that the application is secure in their transaction and personal data, the user will trust the application. While trust also influences consumer behavioral intention, it implies that perceived security indirectly positively affects consumer behavioral intention. This finding shows that perceived security is highly essential in improving consumer behavioral intention. The perceived security provides multiple impacts on the consumer behavioral intention.

However, the examination of particular indirect effects reveals that the perceived usefulness does not influence consumer behavioral intention through trust. The higher the perceived usefulness did not affect consumers behavioral intention through trust in digital payment applications. The findings of this study differ from those of earlier investigations (Chen & Barnes, 2007; Singh & Sinha, 2020) stating that consumers' behavioral intentions are influenced by perceived usefulness through trust. Respondents who believe that using digital payment applications makes transactions easier do not necessarily trust the information contained in the digital transaction process, and therefore do not necessarily encourage using digital payment applications. While perceived security influences consumer behavioral intention through trust in using digital payment applications, according to the analysis of particular indirect effects. As a result, it is reasonable to conclude that the greater the perceived security of digital payment applications, the greater the consumer's trust in utilizing digital payment services. As a result, customers' behavioral intentions to use digital payment applications will increase as their trust grows. The findings of this study are consistent with those of prior investigations. (Enaizan et al., 2020; Flavián & Guinalíu, 2006; C. Kim et al., 2010). Respondents who believe that the digital payment application they are using is safe in processing information. Nevertheless, perceived ease of use increases perceived usefulness and indirectly improves the behavioral intention of users. This finding reveals that perceived ease of use provides multiple effects in enhancing the user's behavioral intention. For example, when users find that it is effortless to use digital payment platforms, they believe that the platform could benefit from performing the transaction more efficiently and effectively. Furthermore, this impact will subsequently enhance the users' behavioral intention by delivering a positive word of mouth to the other colleagues.

The last finding of this study found that perceived ease of use did not <sup>3</sup> indirectly affect consumer behavioral intention through perceived usefulness and trust. The <sup>2</sup> hypothesis was not empirically supported. Even though every two consecutive constructs' direct relationship is significant, the indirect effect of perceived ease of use on consumer behavioral intention is not strong enough. This result may be interpreted due to the direct relationship between two constructs; namely, perceived usefulness on trust is significant, but it is weak. Hence, the mediating role of perceived usefulness and trust is deficient and not significant.

## 6. Conclusion

The initial purpose of this work is to investigate the acceptance of TAM on the digital payment platforms in Surabaya, Indonesia. The research model extends the TAM by including the p<sup>4</sup> perceived ease of use, perceived security, perceived usefulness, and trust in improving the user's behavioral intention. Eleven hypotheses were developed based on the research model and previous studies. Nine of eleven hypotheses were empirically-supported, <sup>1</sup> while two others were not supported. Perceived security directly affects trust and consumer behavioral intention (H1, H6). Perceived ease of use directly affects perceived usefulness and consumer behavioral intention (H2, H5). Perceived security indirectly influences consumer behavioral intention through trust (H8). Furthermore, perceived usefulness directly trusts consumer behavioral intention (H3, H7). Trust directly affects behavioral intention (H4). Perceived ease of use indirectly affects consumer behavioral intention through

perceived usefulness (H10). Moreover, perceived security affects consumer behavioral intention indirectly through trust (H8). Perceived ease of use influences perceived usefulness. Perceived usefulness did not indirectly influence consumer behavioral intention through trust (H9). Finally, perceived ease of use did not affect consumer behavioral intention through perceived usefulness and trust (H11). These findings extend the technology acceptance model in Indonesia in using digital payment platforms. These insights might then be used to enrich current research on user adoption of new technology. This research suggests a managerial implication for digital payment platforms providers to improve users' behavioral intentions. In enhancing the user's behavioral intention, there is a requirement to promote perceived ease of use, perceived security, perceived usefulness, and trust. This study has limitations covering only five factors and the population surveyed. Future research needs to consider broader factors such as perceived enjoyment and quality. Also, future research needs to study more comprehensive population coverage, such as the professional and practitioner.

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