



## Examining E-Payment Adoption Intention Among Indonesian Users: An Extended Technology Acceptance Model Incorporating Risk, Trust, and Religiosity

\*Siti Nadiatul Istiqomah

Universitas Indonesia, Indonesia

Machmudin Eka Prasetya

Universitas Indonesia, Indonesia

---

**\*Corresponding author:**

Siti Nadiatul Istiqomah, Universitas  
Indonesia, Indonesia.

✉ [siti.nadiatul63@gmail.com](mailto:siti.nadiatul63@gmail.com)

---

**Article Info:**

**Article history:**

Received: May 08, 2026

Revised: June 23, 2026

Accepted: July 03, 2026

---

**Keywords:**

Intention; Religiosity; Risk; TAM;  
Trust.

---

**Abstract**

**Background:** Despite the rapid growth of e-payment transactions in Indonesia, adoption remains uneven due to concerns regarding perceived risk, trust, and religious considerations. Existing Technology Acceptance Model (TAM) studies rarely integrate these socio-cultural factors simultaneously.

**Objective:** The purpose of this study is to examine how users' intentions to adopt e-payment technology are influenced by perceived usefulness (PU), ease of use (PEOU), risk, trust, and religiosity.

**Methods:** This study employed 193 samples and Partial Least Squares Structural Equation Modeling (PLS-SEM).

**Results:** The study's findings show that users' intentions to adopt e-payments are significantly influenced by risk, trust, and religiosity factors. On the other hand, users' intentions do not appear to be significantly impacted by perceived usefulness (PU) or ease of use (PEOU). According to these results, users' decisions to adopt e-payment technology are dominated by non-technical factors such as perceived risk, degree of system trust, and the influence of religion, even though technical factors such as usefulness and ease of use are generally assumed to influence adoption.

**Conclusion:** The study's implications highlight the significance of risk management, enhancing confidence in electronic payment systems, and incorporating religious values into the development of marketing strategies. By integrating risk, trust, and religiosity into examining users' intentions, this study contributes to the development of a modified Technology Acceptance Model. It also helps developers and e-payment service providers better understand the factors affecting users' adoption of this technology.

---

**To cite this article:** Istiqomah, S. N., & Prasetya, M. E. (2026). Examining e-payment adoption intention among Indonesian users: An extended technology acceptance model incorporating risk, trust, and religiosity. *Journal of Business, Social and Technology*, 7(3), 1136–1148. <https://doi.org/10.59261/jbt.v7i3.668>

---

### INTRODUCTION

Accounting and information technology play an important role in providing the information needed for decision making (Ali et al., 2020). One of the applications of technology that is currently developing rapidly is digital financial services, which functions as an intermediary in financial activities (Aaron et al., 2017; Syafira et al., 2020). This development is in line with the increasing number of internet users in Indonesia, which reached 212.9 million in January 2023 (Ventures, 2023). The younger generation is the main driver of the digital economy, although there needs to be equal access to technology outside big cities so that its benefits can be felt by the entire community (Batunanggar, 2019; Dharma, A., 2019; Rambe, 2018).

Globally, the digital payment market is projected to reach USD 11.55 trillion by 2024, with the Asia-Pacific region leading adoption owing to high smartphone penetration and government-backed financial inclusion programs (Statista, 2024; World Bank, 2022). Within this global landscape, Indonesia represents one of the fastest-growing digital payment markets, driven by a population exceeding 270 million and an internet penetration rate surpassing 77% (Ventures, 2023).

Developing countries are experiencing significant growth in mobile communication technology, which has triggered the emergence of various technology-based services such as mobile commerce, mobile banking, and e-wallets (Madan & Yadav, 2016). Fintech in Indonesia has great potential, but the main challenge in its adoption is low financial literacy (Batunanggar, 2019). Therefore, the government and private sector are trying to improve public understanding of digital finance, which can drive user growth and transaction volume (Ventures, 2023).

Electronic money transactions in Indonesia have increased drastically from IDR 2 trillion in 2012 to IDR 205 trillion in 2020 (Insight Asia, 2022). However, the adoption of this technology faces several challenges, such as awareness, trust, security, and technical constraints including poor cellular networks and service fees (Joseph, 2020). Another factor influencing fintech adoption is the risk perceived by users, which can affect their trust and decisions in using digital financial services (Prasetya & Shuhidan, 2023).

Consumer trust is a key factor in digital transactions compared to traditional transactions (Kim et al., 2008). Trust in electronic transactions focuses more on the digital process, while in conventional transactions, trust tends to be personal. According to Bank Indonesia (2023), electronic money transaction values reached IDR 421.43 trillion in 2022, representing a 27.4% year-on-year increase, while OJK (2023) reported that the total number of registered e-money users exceeded 508 million accounts nationwide. Despite this rapid growth, consumer adoption remains heterogeneous across demographic and geographic segments.

A critical synthesis of prior findings reveals notable inconsistencies: while Prasetya (2023) confirm trust as the dominant predictor of e-wallet adoption in Indonesia, Hanif (2023) found trust insignificant in Islamic P2P lending contexts. Similarly, religiosity consistently predicts adoption in Islamic fintech settings Sutarso (2022) and Usman (2022), yet shows no effect in digital zakat payment contexts (Syafira et al., 2020). These divergences suggest that contextual and cultural factors significantly moderate TAM constructs, underscoring the need for an integrated model that simultaneously accounts for risk, trust, and religiosity within the specific context of Indonesian e-payment adoption.

In addition to economic and business aspects, the use of fintech-based financial services is also related to social activities, including philanthropy (Usman et al., 2022). Religiosity is an important factor in determining individual behavior towards new technology, because individuals with certain religious beliefs tend to consider moral and ethical aspects before accepting or rejecting a technology (Putra et al., 2017; Setiawan et al., 2024). In the context of Islamic finance, electronic money is considered halal as long as there is no evidence that shows a prohibition in Islamic law (Anam, 2018). Therefore, fintech service providers are expected to ensure that their products meet spiritual needs and applicable laws.

In information systems research, the Technology Acceptance Model (TAM) is a commonly used model to predict the adoption of new technologies (Davis, 2000; Venkatesh & Bala, 2008). In addition to perceived ease of use and usefulness factors, new elements such as risk and trust have been incorporated into the model to understand the adoption of electronic payment services (Usman et al., 2022). The integration of risk perception into TAM aims to help managers create a safe digital environment and increase consumer trust.

Based on this background, studies that combine risk, trust, religiosity, and TAM elements in understanding the adoption of electronic payment technology are still limited. Therefore, this study aims to examine these factors in influencing user intentions to use electronic payment systems. By understanding the differences in risk, level of trust, the influence of religiosity, and factors in TAM, this study contributes to improving the understanding of technology adoption in diverse cultural contexts

The urgency of this research is further heightened by the rapid pace of digital transformation in Indonesia, where Bank Indonesia's Blueprint for the Indonesian Payment

System (BSPI) 2025 mandates full interoperability of digital payment platforms. Despite this policy-driven push, e-payment adoption remains uneven, particularly among consumers with limited digital literacy, strong religious orientations, or heightened risk aversion (Batunanggar, 2019). This underscores the need to understand the psychological and socio-cultural determinants of e-payment adoption beyond purely technical TAM constructs.

Specifically, the research gap addressed by this study is threefold: (1) most prior TAM extensions in e-payment research focus on technical variables while neglecting socio-cultural determinants such as religiosity (Venkatesh & Davis, 2000); (2) findings on risk and trust are inconsistent across different fintech contexts, suggesting moderating influences not yet fully explored (Hanif & Santosa, 2023; Prasetya & Shuhidan, 2023); and (3) no study has simultaneously integrated perceived usefulness, ease of use, risk, trust, and religiosity within the Indonesian e-payment context using PLS-SEM. The novelty of this study lies in its development of a culturally-adapted TAM that explicitly incorporates religiosity alongside risk and trust, providing a comprehensive framework for understanding e-payment adoption behavior in Muslim-majority societies such as Indonesia.

This study explicitly pursues the following objectives: (1) to examine the effect of perceived usefulness (PU) on e-payment adoption intention; (2) to examine the effect of perceived ease of use (PEOU) on adoption intention; (3) to examine the effect of perceived risk on adoption intention; (4) to examine the effect of perceived trust on adoption intention; and (5) to examine the effect of religiosity on adoption intention, within the context of Indonesian e-payment users.

## Hypothesis Development

### *Technology Acceptance Model (TAM)*

When doing an analysis of how people use technology or gadgets, the Technology Acceptance Model (TAM) takes into consideration two crucial factors: perceived usefulness and perceived ease of use (Davis, 1989). The degree to which an individual thinks that using a system might enhance their performance in an organizational setting is known as perceived usefulness. Conversely, perceived ease of use refers to the belief that a certain system may be used with little effort (Davis, 1989; McCoy et al., 2007). TAM is often used with little modification in technology usage studies. The fundamental idea of TAM may be used as a flexible basis for further development, and the process of creating the TAM concept preserves the fundamental ideas of the model (Hanif & Santosa, 2023).

### *Perceived Usefulness (PU)*

According to Azman (2020), perceived usefulness is defined as a person's belief that utilising an application system could enhance their performance. Utility in the context of e-payment systems refers to how well these services can enhance the customer service experience while carrying out necessary tasks. Accordingly, consumer acceptance of e-payments for improved financial services is strongly influenced by perceived usefulness.

$H_1$ : Perceived usefulness positively influences an individual's behavioral intention to use e-payment services.

### *Perceived Ease of Use (PEOU)*

A person's belief that utilising a particular system allows them to avoid needless additional effort is known as perceived ease of use (PEOU) (Davis, 1989). Accessibility and technology registration are two aspects of electronic payment usability. New technologies can be designed to be as user-friendly as possible for customers by utilising customer experience. This implies that a technology system is more likely to be used if it is thought to be simpler to use than others (Tee et al., 2024).

$H_2$ : Perceived ease of use positively influences individuals' behavioral intention to use e-payment services.

### *Perceived Risk*

In the Technology Acceptance Model (TAM) paradigm, perceived ease of use refers to an individual's assessment of the effort needed to use a system, which may not necessarily align with the system's actual performance. This phenomena encompasses 'risk' due to consumers' lack of

clear understanding of the repercussions of this disparity (Im et al., 2008). It pertains to customers' perceptions on the probability of unexpected adverse occurrences arising from online transactions (Im et al., 2008; Kim et al., 2008). Risk is an uncertainty that can create the potential for loss for the decision-maker (Suardana & Mahyuni, 2024).

H3: Perceived risk negatively influences individuals' behavioral intention to use e-payment services.

#### Perceived Trust

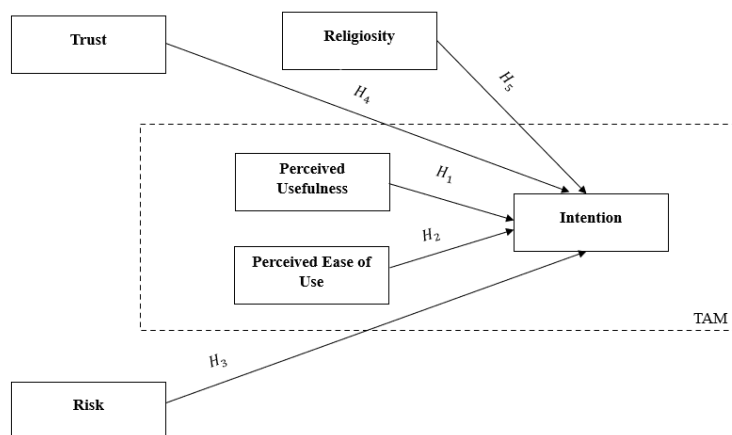
A significant element influencing the disparity between perceived risk and real risk is customer trust in the electronic payment system. Within the TAM framework, trust exhibits both direct and indirect correlations with perceived usefulness, thus influencing people's behavior towards technology adoption (Uche et al., 2021). Usman (2022) showed that trust is an important element of the retail process, which is the basis for interactions between consumers and merchants.

H4: Perceived trust positively influences individuals' behavioral intention to use e-payment services.

#### Perceived Religiosity

Religiosity means an individual's commitment to religious tenets and practices (Suhartanto, 2019). For Muslim consumers, religiosity serves as a crucial and influential determinant in the acceptance of new products, concepts, or technologies (Setiawan et al., 2024). Religiosity not only influences consumer behavior but also influences perceived usefulness (PU) which is in accordance with the TAM construct (Jamshidi & Hussin, 2016).

H5: Religiosity positively influences individuals' behavioral intentions to use e-payment services.



**Figure 1.** Research Framework

## METHOD

This study is a quantitative study using a questionnaire instrument for each component of the research variable. This study adapted previous research instruments to operationalize the variables. For the PU and PEOU variables, the instruments were adopted from research Muñoz-(2017); Shaw (2014); Usman (2022) consisting of 10 instruments for PU and 8 instruments for PEOU. Second, the risk variable was adopted from research Muñoz (2017); Yang (2015) consisting of 11 instruments. Third, for the trust variable, the instrument was adopted from Shaw, (2014); Usman (2022) consisting of 9 research instruments. Furthermore, for religiosity, the instrument was adopted from research Hanif (2023); Jamshidi (2016); Usman (2022) consisting of 7 research instruments.

Finally, for the adoption of electronic payment technology, the instrument was adopted from research Muñoz (2017); Shaw (2014); Usman (2022) which consisted of 9 research instruments. This study used a 7-point Likert scale to assess each characteristic, with 1 indicating "strongly disagree" and 7 indicating "strongly agree." Participants in this study were only electronic payment consumers in Indonesia. This study used a nonprobability sampling

technique, namely convenience sampling. The questionnaire was distributed online via Google Forms during January–March 2024 through social media platforms (WhatsApp, Instagram, and Telegram) and academic networks.

Respondent screening criteria required participants to be Indonesian citizens aged 17 years or older who had actively used at least one e-payment service (GoPay, OVO, Dana, ShopeePay, or bank-issued e-money) within the past six months. Convenience sampling was selected given the exploratory nature of this study and the absence of a complete sampling frame of Indonesian e-payment users; however, the authors acknowledge this as a limitation that may affect the generalizability of findings.

This study used G\*power version 3.1.9.7 to determine the minimum sample size required. G\*Power was configured with a medium effect size  $f^2 = 0.15$ , statistical power  $(1-\beta) = 0.95$ , significance level  $\alpha = 0.05$ , and five predictors, yielding a minimum required sample of 138 respondents. The obtained sample of 193 respondents thus exceeds this minimum, ensuring adequate statistical power for the PLS-SEM analysis. In addition, data from this study were analyzed using Microsoft Excel, SPSS version 29.0, and Smart PLS version 4.0. Hypothesis analysis and testing were carried out through Structural Equation Modeling (SEM), with Smart PLS as the analysis tool.

## RESULTS AND DISCUSSION

### Results

The researcher managed to obtain 203 respondents, of which data from 193 respondents could be used for the research. The researcher eliminated 10 respondents because they were considered outliers. An overview of the research respondents can be seen in Table 1.

**Table 1**

#### *Respondent Demographics*

| No | Demographic Characteristics       | Number of respondents | Percentage (%) |
|----|-----------------------------------|-----------------------|----------------|
| 1  | <b>Gender</b>                     |                       |                |
|    | Male                              | 80                    | 41,45 %        |
|    | Female                            | 113                   | 58,55 %        |
| 2  | <b>Age</b>                        |                       |                |
|    | 17-22 years                       | 18                    | 9,33%          |
|    | 23-28 years                       | 146                   | 75,65%         |
|    | 29-33 years                       | 4                     | 2,07%          |
|    | >34 years                         | 25                    | 12,95%         |
| 3  | <b>Educational Level</b>          |                       |                |
|    | Senior School                     | 26                    | 13,47%         |
|    | Diploma                           | 7                     | 3,63%          |
|    | Bachelor's Degree                 | 144                   | 74,61%         |
|    | Postgraduate's Degree             | 16                    | 8,29%          |
| 4  | <b>Monthly Income</b>             |                       |                |
|    | IDR 0 – 999.999                   | 36                    | 18,65%         |
|    | IDR 1.000.000 – 3.999.999         | 63                    | 32,64%         |
|    | IDR 4.000.000 – 6.999.999         | 53                    | 27,46%         |
|    | IDR 7.000.000 – 9.999.999         | 12                    | 6,22%          |
|    | > IDR 10.000.000                  | 29                    | 15,03%         |
| 5  | <b>Experience using e-payment</b> |                       |                |
|    | More than 1 year                  | 183                   | 94,82%         |
|    | Less than 1 year                  | 10                    | 5,18%          |

#### **Model Specification**

Designing a path model that addresses variables and constructs in accordance with theory and logic is the first step in research employing the PLS-SEM approach. The exogenous (independent) constructs of perceived usefulness (PU), ease of use (PEOU), risk (RS), trust (TR), and religiosity (RL) can be used to explain the endogenous (dependent) construct in this study,

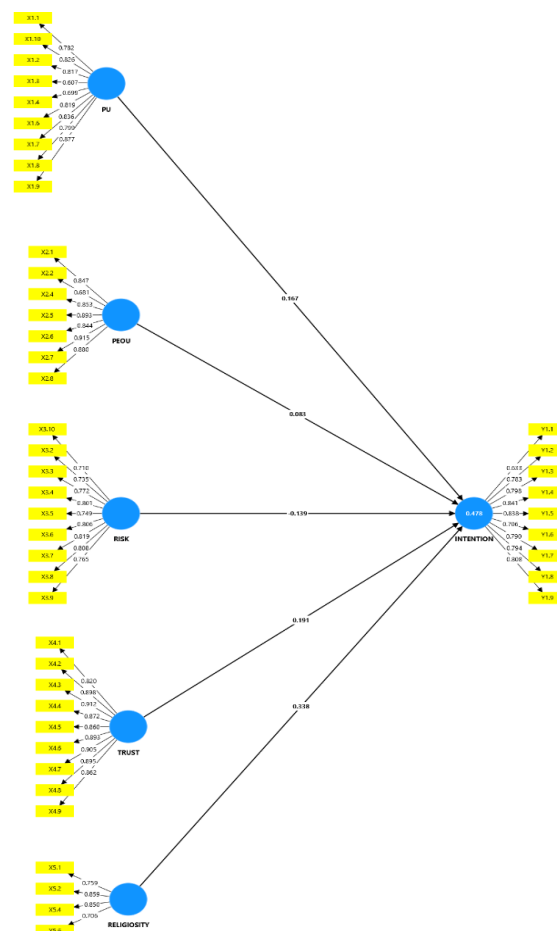
which is the intention to adopt technology (IT). The study's path model is displayed in Figure 2.

### Outer Model

Accurate measurement and representation of the study's constructs are the goals of the outer model (F. Hair Jr et al., 2014). The first step is a reliability test that assesses a construct's internal consistency reliability by examining the composite reliability. If a variable's Cronbach's Alpha is greater than 0.5 and its Composite Reliability value is greater than 0.7, it is deemed reliable (Hair Jr et al., 2016). In Table 2, two composite reliability indices are reported: Composite Reliability (rho\_A) provides a more conservative estimate that adjusts for indicator weight uncertainty in PLS, while Composite Reliability (rho\_C), equivalent to traditional Dillon-Goldstein's rho, represents the conventional reliability measure. Both indices must exceed 0.70 for a construct to be deemed reliable. All constructs in this study satisfy both criteria, confirming internal consistency reliability.

**Table 2**  
*Reliability results*

| Variable                   | Cronbach's alpha | Composite reliability (rho_a) | Composite reliability (rho_c) | Remark   |
|----------------------------|------------------|-------------------------------|-------------------------------|----------|
| Intention (Y)              | 0.918            | 0.921                         | 0.933                         | Reliable |
| Perceived Usefulness (X1)  | 0.933            | 0.940                         | 0.947                         | Reliable |
| Perceived Ease of Use (X2) | 0.922            | 0.926                         | 0.936                         | Reliable |
| Risk (X3)                  | 0.808            | 0.834                         | 0.873                         | Reliable |
| Trust (X4)                 | 0.918            | 0.949                         | 0.931                         | Reliable |
| Religiosity (X5)           | 0.964            | 0.967                         | 0.969                         | Reliable |



**Figure 2.** Path Model



Examining convergent and discriminant validity is the next stage, as shown in Table 3. The degree of positive correlation between an indicator and other indicators on the same variable is known as convergent validity (F. Hair Jr et al., 2014). Researchers use the average variance extracted (AVE) to assess convergent validity. The AVE value needs to be more than 0.5; this ratio indicates that latent factors account for over 50% of the reflective indicator's variance (Hair Jr et al., 2016).

The degree to which a construct can be empirically separated from other constructs is known as discriminant validity, which guarantees that the construct measures what it is intended to measure (F. Hair Jr et al., 2014). A different strategy, the heterotrait-monotrait correlation ratio (HTMT), which is based on a multitrait-multimethod matrix, is suggested by (Henseler et al., 2015). Potential issues with discriminant validity are indicated by HTMT values that are close to 1. While some researchers recommend a slightly higher threshold of <0.90, others set a stricter threshold of  $\leq 0.85$  (Ab Hamid et al., 2017). For this study, Table 3 presents the HTMT matrix values (rather than the Fornell-Larcker criterion), where all off-diagonal values below 0.85 confirm satisfactory discriminant validity (Henseler et al., 2015). This approach was adopted because HTMT has been demonstrated to be a more sensitive and accurate criterion for discriminant validity assessment in PLS-SEM contexts compared to the traditional Fornell-Larcker criterion.

**Table 3***R<sup>2</sup>, Q<sup>2</sup>, and f<sup>2</sup> Model Fit Results*

|                    | AVE   | IT    | PEOU  | PU    | RL    | RS    | TR |
|--------------------|-------|-------|-------|-------|-------|-------|----|
| Intention (IT)     | 0.607 |       |       |       |       |       |    |
| Ease of Use (PEOU) | 0.718 | 0.584 |       |       |       |       |    |
| Usefulness (PU)    | 0.621 | 0.584 | 0.892 |       |       |       |    |
| Religiosity (RL)   | 0.634 | 0.650 | 0.584 | 0.587 |       |       |    |
| Risk (RS)          | 0.600 | 0.268 | 0.171 | 0.167 | 0.137 |       |    |
| Trust (TR)         | 0.774 | 0.605 | 0.706 | 0.625 | 0.613 | 0.312 |    |

Based on the results of reliability, discriminant validity, and convergent validity in this study, it can be concluded that the outer model in this study is fulfilled. The next stage after the outer model is the inner model.

### Inner Model

Finding evidence that supports the theoretical model (specifically, the theoretical influence between exogenous and endogenous constructs) and observing the influence between latent variables are the goals of this model evaluation (Hair et al., 2011; Musahidah & Sobari, 2021). The inner model comprises the following steps: the coefficient of determination ( $R^2$ ), cross-validated redundancy ( $Q^2$ ), path coefficient, and effect size ( $f^2$ ).

**Table 4***R<sup>2</sup>, Q<sup>2</sup>, and f<sup>2</sup> Model Fit Results*

|                    | R <sup>2</sup> | Q <sup>2</sup> | f <sup>2</sup> |
|--------------------|----------------|----------------|----------------|
| Intention (IT)     | 0,478          | 0,282          |                |
| Ease of Use (PEOU) |                |                | 0.004          |
| Usefulness (PU)    |                |                | 0.016          |
| Religiosity (RL)   |                |                | 0.140          |
| Risk (RS)          |                |                | 0.033          |
| Trust (TR)         |                |                | 0.032          |

Table 4. provides an  $R^2$  result of 0.478 or 47.8%. This states that the PU, PEOU, risk, trust, religiosity variables present the intention variable (IT) of 47.8%, while 52.2% is explained by other variables. This figure indicates that this research model describes a moderate relationship in explaining aspects that influence user intentions in adopting e-payment technology. Second, the value  $Q^2$  in this study is 0.282, this shows that the research model has moderate predictive power in explaining user intentions to adopt e-payment technology, this means that there is room for

other variables that can explain user intentions. Third,  $f^2$  shows the impact of an exogenous construct on changes in the  $R^2$  value on the endogenous construct in the model. PEOU and PU variables have  $f^2$  values  $<0.02$ , it can be stated that there is no effect size of these variables on intention. Risk and trust variables have  $f^2$  values  $>0.02$ , this means that risk and trust have little influence on intention. Meanwhile, for the religiosity variable, it has  $f^2$  values  $>0.15$ , this shows that religiosity has a moderate influence on intention.

### Path Coefficient

Path coefficients in PLS-SEM describe the hypothesized relationships between constructs. The value of this path coefficient ranges from -1 reflecting a strong negative relationship to +1 indicating a strong positive relationship (F. Hair Jr et al., 2014). The hypothesis testing results in Table 5 show that following hypothesis: H1 (Perceived Usefulness  $\rightarrow$  Intention), H2 (Perceived Ease of Use  $\rightarrow$  Intention), H3 (Risk  $\rightarrow$  Intention), H4 (Trust  $\rightarrow$  Intention), and H5 (Religiosity  $\rightarrow$  Intention).

**Table 5**

*Path Coefficient Results*

| Hypothesis Number | Relationship Between variables | Original sample | Sample Mean | Standard deviation | T Statistics | P Values     | Description     |
|-------------------|--------------------------------|-----------------|-------------|--------------------|--------------|--------------|-----------------|
| 1                 | $X_1 \rightarrow Y$            | 0.167           | 0.182       | 0.117              | 1.424        | 0.154        | Rejected        |
| 2                 | $X_2 \rightarrow Y$            | 0.083           | 0.083       | 0.123              | 0.679        | 0.497        | Rejected        |
| 3                 | $X_3 \rightarrow Y$            | -0.139          | -0.140      | 0.065              | 2.142        | <b>0.032</b> | <b>Accepted</b> |
| 4                 | $X_4 \rightarrow Y$            | 0.191           | 0.194       | 0.089              | 2.144        | <b>0.032</b> | <b>Accepted</b> |
| 5                 | $X_5 \rightarrow Y$            | 0.338           | 0.338       | 0.080              | 4.228        | <b>0.000</b> | <b>Accepted</b> |

The results of the examined path coefficients are shown in Table 5 The table shows that  $X_2 \rightarrow Y$  has a value of ( $t = 1.424$ ;  $p = 0.154$ ) and  $X_1 \rightarrow Y$  has a value of ( $t = 0.679$ ;  $p = 0.497$ ). This signifies that PU and PEOU do not exhibit a strong correlation with intention. Consequently, H1 and , H2 in this research are rejected. Additionally,  $X_4 \rightarrow Y$  exhibits a value of ( $t = 2.144$ ;  $p = 0.032$ ), whereas  $X_5 \rightarrow Y$  has a value of ( $t = 4.228$ ;  $p = 0.032$ ). Religiosity and trust have a considerable positive correlation with intention. Consequently, H4 and , H5 in this investigation are affirmed. Simultaneously,  $X_3 \rightarrow Y$  has a value of ( $t = 2.142$ ;  $p = 0.032$ ). It indicates that risk has a substantial negative correlation with purpose. Consequently, H3 in this investigation is affirmed.

### Discussion

#### *Perceived Usefulness and Perceived Ease of Use in Users' Intentions to Use Electronic Payments*

As crucial components for assessing the use of technology or devices, technology acceptance model (TAM) takes into account perceived utility (PU) and perceived ease of use (PEOU) (Davis, 1989). The inner model's path coefficient results showed that there was no correlation between user intention towards electronic payment technology and PU or PEOU. H1 and H2 in this study were thus disproved. According to research by Shaw (2014), PU and the intention to use mobile wallets are strongly positively correlated. However, similar to this study, PEOU does not show a significant relationship with intention. In line with this study, Utomo (2024) found no correlation between behavioural intentions to use electronic money under the TAM and perceived usefulness (PU). The study found that other elements, like trust or satisfaction, can mediate this relationship and affect how people use technology. This demonstrates that while the TAM is generally applicable, its elements and connections may differ depending on the kind of technology or culture.

It is possible to draw the conclusion that consumers' perceptions of the usefulness and simplicity of use of electronic payment technology are not significant determinants in determining whether or not they intend to use the technology. Shaw (2014) stated that the ease of using e-wallets is the same as using physical cards, so users do not consider using e-wallets as something complicated. It aligns with current research, where the ease of using electronic payments is relatively well-known. It can be seen from the research sample that 94.82% of respondents have



used electronic payments for more than a year. Slightly different from previous research, Setiono (2022) stated that with the many e-wallet applications available today, individuals may find it challenging to understand the features available and what distinguishes them from other e-wallet applications. As a result, some users may consider other factors, such as trust in security and risk, more important than PU and PEOU.

### ***Perceived Risk in Users' Intentions to Use Electronic Payments***

The next factor used in this study is risk. Based on the path coefficients in the inner model, risk has a value of ( $t=2.142$ ;  $p=0.032$ ) and an original sample value of  $-0.139$ . It indicates a significant negative relationship between risk and the intention to adopt electronic payment technology, thus H3 in this study is accepted. The results of this research support earlier studies that indicate a negative and significant relationship between risk and the intention to adopt technology (Hanif & Santosa, 2023). On the other hand, some studies indicate that risk does not affect the intention to adopt a technology. Research by Prasetya (2023) revealed that risk does not impact users' goals when using transactions with electronic wallets. Second, research by Sutarso (2022) stated that security risks and operational risks do not have relationship with user intention. Therefore, it can be concluded that high risks in the transaction process using e-payments that have the potential to harm users can affect users' desire to reuse e-payment services.

This can be interpreted that risk can be a factor in technology adoption, because technology involving finance requires a theoretical approach that can consider risk in more detail. Furthermore, risk in Indonesia is influenced by local culture or norms, such as low digital literacy and user trust in financial technology institutions (Batunanggar, 2019). This shows the need for theoretical studies that consider social and cultural factors in building technology adoption. For theoretical implications, e-payment service providers can prioritize user data security technology to reduce user risk perception. Service providers can also provide education on safe practices when using e-payments, such as maintaining data confidentiality and recognizing signs of digital fraud, so it can reduce user risk.

### ***Perceived Trust in Users' Intentions to Use Electronic Payments***

The third factor used in this research is trust. Based on the path coefficient in the inner model, trust has a value ( $t = 2.144$ ;  $p = 0.032$ ), and the original sample value is  $0.191$ , which indicates that trust has a significant positive relationship with the intention to adopt electronic payment technology, so H4 in this research is accepted. This finding corroborates earlier studies that indicate a positive and significant relationship between trust and the intention to adopt technology (Jamshidi & Hussin, 2016; Prasetya & Shuhidan, 2023; Suhartanto, 2019; Syafira et al., 2020). The study's results indicate that for customers, the degree to which an application exhibits competence, addresses user needs, fulfills its commitments, and proves reliable will be the key factors influencing their intention to use the service again. These four factors are crucial as they guarantee benefits for customers (Sutarto, 2022). In contrast to several previous studies, Hanif (2023) discovered that trust did not have a positive and substantial correlation with the choices of Muslim lenders to engage in Islamic P2P lending services.

In this study, trust emerged as an essential factor for users in adopting electronic payment technology. It is because trust serves as the basis for users' belief that their digital transactions are safe. Users who have confidence in the reliability of electronic payment platforms tend to adopt this technology continuously. Additionally, trust acts as a risk-reduction mechanism, underscoring the need of investigating the connection between risk and trust, which is a key component of the decision to use electronic payment technology. Furthermore, e-payment service providers can build user trust by promoting reviews from users who are satisfied with the e-payment services.

### ***Perceived Religiosity in Users' Intentions to Use Electronic Payments***

With an initial sample value of  $0.338$ , religiosity is valued at ( $t = 4.228$ ;  $p = 0.000$ ) based on the path coefficient in the inner model. This implies that the intention to use electronic payment technology is significantly positively correlated with religiosity, thereby supporting the acceptance of H5 in this study. This result supports previous research showing a strong positive

correlation between the intention to adopt technology and religiosity (Hanif & Santosa, 2023; Jamshidi & Hussin, 2016; Suhartanto, 2019).

According to research by Sutarto (2022), SME actors' intentions to use Islamic FinTech services and products are strongly influenced by their level of religiosity. People are more inclined to use Islamic FinTech as their level of religiosity rises because they think these services can be beneficial and follow Islamic rules, like abstaining from *riba*, *gharar*, and *maysir*. Accordingly, religiosity gives SME actors a strong basis on which to conduct business in a way that is consistent with their religious beliefs (Johan et al., 2020). Unlike earlier research, Syafira (2020) showed that religiosity has no beneficial impact on the intention to use digital payments for *zakat*, *infaq*, *alms*, and *waqf*.

Religiosity is among the factors considered in this study when examining users' adoption of electronic payment systems technology because users consider whether the electronic payment service they use follows This indicates that religion is a crucial determinant in shaping people's intentions to embrace e-payment technology in Indonesia. This underscores the need for the TAM to broaden its theoretical framework by including factors of risk, trust, and religion, particularly in the setting of religious nations such as Indonesia. E-payment service providers can also offer features based on religious values, such as services that support *halal* transactions, are free from *usury*, or features that can integrate with *zakat*, *infaq*, and *alms* applications.

This study extends TAM by demonstrating that socio-cultural factors (religiosity, trust, and perceived risk) exert stronger effects on e-payment adoption intention than traditional TAM constructs. This finding suggests that technology acceptance in Muslim-majority emerging economies may be driven more by value-based and trust-based considerations than by perceived usefulness and ease of use.

## CONCLUSION

In accordance with the Technology Acceptance Model (TAM), the findings indicate that perceived usefulness (PU) and perceived ease of use (PEOU) do not have a significant relationship with the intention to adopt e-payment technology. In contrast, trust and religiosity show a positive and significant relationship with adoption intention, while perceived risk has a negative and significant effect. The insignificance of PU and PEOU suggests that e-payment systems have become widely familiar and sufficiently easy to use, comparable to conventional payment methods such as physical cards. These results imply that the adoption of e-payment technology is now primarily driven by psychological and contextual factors rather than functional perceptions, highlighting the importance for service providers to strengthen user trust, reduce perceived risk, and accommodate religiosity-related needs in system design and service features.

This study has several limitations. The sample is geographically concentrated on Java Island, which limits the generalizability of the findings to the broader Indonesian population. In addition, the use of convenience sampling may introduce selection bias. Future studies are encouraged to apply stratified random sampling to improve representativeness and to focus on a single e-payment platform to reduce variability across systems. Further research may also incorporate moderating variables such as gender, age, and education level to enrich the TAM framework, as well as extend the model to other Islamic fintech services or conduct cross-country comparisons among Muslim-majority countries. Longitudinal approaches could also be employed to examine changes in adoption intention over time as users gain experience. Overall, this study contributes theoretically by extending TAM with contextual variables and practically by emphasizing the importance of trust, perceived risk, and religiosity in shaping user adoption, while also highlighting the need for developers to enhance security, responsiveness, and religiously accommodating features in e-payment systems.

## ACKNOWLEDGEMENT

This research did not receive any specific funding from public, commercial, or nonprofit organizations. The authors express sincere gratitude to all respondents who participated in this study and to the anonymous reviewers whose constructive feedback significantly improved the quality of this manuscript.

### AUTHOR CONTRIBUTION STATEMENT

All authors contributed equally to the conceptualization, methodology, data collection, formal analysis, and writing of this manuscript. The corresponding author is responsible for revisions, responses to reviewers, and final submission to the journal.

### REFERENCES

- Aaron, M., Rivadeneyra, F., & Sohal, S. (2017). *Fintech: Is this time different? A framework for assessing risks and opportunities for central banks* (No. 2017-10). Bank of Canada Staff Discussion Paper.
- Ab Hamid, M. R., Sami, W., & Mohmad Sidek, M. H. (2017, September). Discriminant validity assessment: Use of Fornell & Larcker criterion versus HTMT criterion. In *Journal of physics: Conference series* (Vol. 890, No. 1, p. 012163). IOP Publishing. <https://doi.org/10.1088/1742-6596/890/1/012163>
- Albastaki, T., Hamdan, A., Albastaki, Y., & Bakir, A. (2022). Factors affecting e-payment acceptance by customers: an empirical study in the Kingdom of Bahrain. *Competitiveness Review*, 34(1), 107–124. <https://doi.org/10.1108/CR-09-2022-0133>
- Ali, B. J., Salameh, A. A., & Salem Oudat, M. (2020). the Relationship Between Risk Measurement and the Accounting Information System: a Review in the Commercial and Islamic Banking Sectors. *PalArch's Journal of Archaeology of Egypt / Egyptology*, 17(6), 13276–13290.
- Anam, C. (2018). E-Money (Uang Elektronik) Dalam Perspektif Hukum Syari'Ah. *Qawānīn Journal of Economic Syariah Law*, 2(1), 95–112. <https://doi.org/10.30762/q.v2i1.1049>
- Azman, H., Yi, T. Z., & Bakri, M. H. (2020). The factors that affecting consumer intention to utilize the electronic payment system in Malaysia. *Journal of Technology Management and Technopreneurship*, 1(8), 129–138.
- Batunanggar, S. (2019). Fintech Development and Asian Development Bank Institute. In *ADB Working Paper Series FINTECH* (Vol. 1014, Issue 1014).
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 319–340. <https://doi.org/10.2307/249008>
- Dharma, I. M. A. (2019). Pengembangan buku cerita anak bergambar dengan insersi budaya lokal bali terhadap minat baca dan sikap siswa kelas v sd kurikulum 2013. *Journal for Lesson and Learning Studies*, 2(1), 53-63. <https://doi.org/10.23887/jlls.v2i1.17321>
- F. Hair Jr, J., Sarstedt, M., Hopkins, L., & G. Kuppelwieser, V. (2014). Partial least squares structural equation modeling (PLS-SEM) an emerging tool in business research. *European Business Review*, 26(2), 106-121.
- Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing theory and Practice*, 19(2), 139-152. <https://doi.org/10.2753/MTP1069-6679190202>.
- Hair Jr, J., Hult, G. T., Ringle, C., & Sarstedt, M. (2016). A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM) - Joseph F. Hair, Jr., G. Tomas M. Hult, Christian Ringle, Marko Sarstedt. In *Sage*.
- Hanif, M. A., & Santosa, P. B. (2023). TAM Construct, Trust, and Religiosity for Decision of Muslim Lenders to Use Funding Services on Sharia Peer-to-Peer Lending Platforms (Website and Apps). *Jurnal Ekonomi Syariah Teori Dan Terapan*, 10(2). <https://doi.org/10.20473/vol10iss20232pp151-168>
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115–135. <https://doi.org/10.1007/s11747-014-0403-8>
- Im, I., Kim, Y., & Han, H. J. (2008). The effects of perceived risk and technology type on users' acceptance of technologies. *Information and Management*, 45(1), 1–9. <https://doi.org/10.1016/j.im.2007.03.005>
- Insight Asia. (2022). Consistency That Leads: E-Wallet Industry Outlook 2023. In *Insightasia.com*.
- Jamshidi, D., & Hussin, N. (2016). Forecasting patronage factors of Islamic credit card as a new e-commerce banking service: An integration of TAM with perceived religiosity and trust. *Journal of Islamic Marketing*, 7(4), 378–404. <https://doi.org/10.1108/JIMA-07-2014-0050>
- Johan, Z. J., Hussain, M. Z., Mohd, R., & Kamaruddin, B. H. (2020). Muslims and non-Muslims intention to hold Shariah-compliant credit cards: a SmartPLS approach. *Journal of Islamic Marketing*, 12(9), 1751–1785. <https://doi.org/10.1108/JIMA-12-2019-0270>

- Joseph, T. E. (2020). How to Improve Mobile Money Service Usage and Adoption by Nigerians in the Era of Covid-19. *International Journal of Finance, Insurance and Risk Management*, 10(Issue 3), 31–52. <https://doi.org/10.35808/ijfirm/220>
- Kim, D. J., Ferrin, D. L., & Rao, H. R. (2008). A trust-based consumer decision-making model in electronic commerce: The role of trust, perceived risk, and their antecedents. *Decision Support Systems*, 44(2), 544–564. <https://doi.org/10.1016/j.dss.2007.07.001>
- Madan, K., & Yadav, R. (2016). Behavioural intention to adopt mobile wallet: a developing country perspective. *Journal of Indian Business Research*, 8(3), 227–244. <https://doi.org/10.1108/JIBR-10-2015-0112>
- McCoy, S., Galletta, D. F., & King, W. R. (2007). Applying TAM across cultures: The need for caution. *European Journal of Information Systems*, 16(1), 81–90. <https://doi.org/10.1057/palgrave.ejis.3000659>
- Muñoz-Leiva, F., Climent-Climent, S., & Liébana-Cabanillas, F. (2017). Determinants of intention to use the mobile banking apps: An extension of the classic TAM model. *Spanish Journal of Marketing - ESIC*, 21(1), 25–38. <https://doi.org/10.1016/j.sjme.2016.12.001>
- Musahidah, U., & Sobari, N. (2021). Determinants of the Intentions of Indonesian Muslim Millennials in Cash Waqf Using E-Payment. *Jurnal Ekonomi Dan Perbankan Syariah*, 9(2), 65–91. <https://doi.org/10.46899/jeps.v9i2.284>
- Prasetya, M. E., & Shuhidan, S. M. (2023). Security, Risk and Trust in E-wallet Payment Systems: Empirical Evidence from Indonesia. *Management and Accounting Review*, 22(1), 349–374. <https://doi.org/10.24191/mar.v22i01-14>
- Putra, M. I., Ratnasari, R. T., & Prasetyo, A. (2017). Religiosity Effect Analysis of Consumer Behavior and Consumer Intention on Online Shopping: East Java Community Case Study. *Academic Research International*, 8(4), 103–110.
- Rambe, R. N. K. (2018). Penerapan Strategi Index Card Match Untuk Meningkatkan Hasil Belajar Siswa Pada Mata Pelajaran Bahasa Indonesia. *Jurnal Tarbiyah : Jurnal Ilmiah Kependidikan*, 25(1), 93–124. <https://doi.org/10.30829/tar.v25i1.237>
- Setiawan, D., Junaidi, Marzal, J., Zulfanetti, & Fitri, L. E. (2024). Integrating Religiosity with Technology Acceptance Model (TAM) and Technology Organization Environment (TOE) Frameworks: A Study on ICT Adoption in Micro and Small Enterprises. *Pakistan Journal of Commerce and Social Sciences*, 18(3), 651–675.
- Setiono, D., Anggraini, T., & Hiram, T. P. B. P. S. (2022). Analisis Technology Acceptance Model Pada E-Wallet Menggunakan Sem-Pls. *Sebatik*, 26(2), 458–464. <https://doi.org/10.46984/sebatik.v26i2.2012>
- Shaw, N. (2014). The mediating influence of trust in the adoption of the mobile wallet. *Journal of Retailing and Consumer Services*, 21(4), 449–459. <https://doi.org/10.1016/j.jretconser.2014.03.008>
- Suardana, I. W. A., & Mahyuni, L. P. (2024). How Ease of Use, Convenience, Risk, Trust, and Security Affect Mobile Banking Use via Satisfaction. 8(3), 423–435.
- Suhartanto, D. (2019). Predicting behavioural intention toward Islamic bank: a multi-group analysis approach. *Journal of Islamic Marketing*, 10(4), 1091–1103. <https://doi.org/10.1108/JIMA-02-2018-0041>
- Sutarso, Y. (2022). The Role of Islamic Religiosity on the Relationship Between Risk, Trust, and Intention to Use Digital Payments During the COVID-19 Pandemic. *International Journal of Islamic Economics and Finance (IJIEF)*, 5(2), 177–200. <https://doi.org/10.18196/ijief.v5i2.13990>
- Syafira, F. N., Ratnasari, R. T., & Ismail, S. (2020). the Effect of Religiosity and Trust on Intention To Pay in Ziswaf Collection Through Digital Payments. *Jurnal Ekonomi Dan Bisnis Islam (Journal of Islamic Economics and Business)*, 6(1), 98. <https://doi.org/10.20473/jebis.v6i1.17293>
- Tee, Y.-Y., Ting, M.-S., & Abdul Talib, A. N. (2024). Facilitating the Influence on Adopting E-Wallets: an Extended Technology Acceptance Model (TAM) Approach. *International Journal of Academic Research in Business and Social Sciences*, 14(2), 880–892. <https://doi.org/10.6007/ijarbss/v14-i2/20587>
- Uche, D. Ben, Ousagwu, O. B., Nwosu, S. N., & Otika, U. S. (2021). Integrating Trust into Technology

- Acceptance Model (TAM), the Conceptual Framework for E-Payment Platform Acceptance. *British Journal of Management and Marketing Studies*, 4(4), 34–56. <https://doi.org/10.52589/bjmms-tb3xtkpi>
- Usman, H., Mulia, D., Chairy, C., & Widowati, N. (2022). Integrating trust, religiosity and image into technology acceptance model: the case of the Islamic philanthropy in Indonesia. *Journal of Islamic Marketing*, 13(2), 381–409. <https://doi.org/10.1108/JIMA-01-2020-0020>
- Utomo, R. G., Yasirandi, R., & Suwastika, N. A. (2024). Adoption dynamics of digital payments: an urban case study on e-money using the technology acceptance model. *Jurnal Infotel*, 16(3), 567–581.
- Venkatesh, V., & Bala, H. (2008). Technology Acceptance Model 3 and a Research Agenda on Interventions. *Journal of Decision Sciences Institute*, 39(2), 273–315.
- Venkatesh, V., & Davis, F. D. (2000). Theoretical extension of the Technology Acceptance Model: Four longitudinal field studies. *Management Science*, 46(2), 186–204. <https://doi.org/10.1287/mnsc.46.2.186.11926>
- Ventures, E. (2023). Keadilan Digital Bagi Seluruh Rakyat Indoensia.
- Yang, Q., Pang, C., Liu, L., Yen, D. C., & Michael Tarn, J. (2015). Exploring consumer perceived risk and trust for online payments: An empirical study in China's younger generation. *Computers in Human Behavior*, 50, 9–24. <https://doi.org/10.1016/j.chb.2015.03.058>