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# Mobile banking acceptance model for Generation Z: The role of trust, self-efficacy, and enjoyment

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#### **Abstract**

**Research aims:** This research aims to develop a model that explains m-banking acceptance behavior, especially for Generation Z, which is driven by perceptions of trust, self-efficacy, and enjoyment.

**Design/Methodology/Approach:** The population was Generation Z as users of mbanking in Indonesia. The data collection instrument employed a questionnaire. The analysis technique used was component or variance-based Structural Equation Modeling (SEM) utilizing Partial Least Square (PLS)

**Research findings:** The results showcased that trust, self-efficacy, and enjoyment influenced perceived usefulness and ease of use. These perceptions influenced attitudes, intentions to use, and use of m-banking. Generation Z m-banking users believe that potential risks could be resolved effectively and efficiently. They have high confidence that they will be able to overcome problems.

Theoretical contribution/Originality: This research has succeeded in developing TAM by adding trust, self-efficacy, and enjoyment. Generation Z users prioritize not only ease of use but also the usability and advantages of application services. Those who have self-confidence will choose services that offer security and comfort. Applications that receive a positive response from their users will encourage their use.

**Research limitation/Implication:** The results of previous research still contain gaps regarding the role of research variables. Therefore, it is necessary to study in more depth the m-banking acceptance model of Generation Z.

**Keywords:** Enjoyment; Generation Z; Self-efficacy; Technology Acceptance Model; Trust

# Introduction

Information technology has changed many things (Mladenović & Krajina, 2020), including the use of mobile banking (m-banking) (Alkhowaiter, 2020). M-banking is defined as an innovative banking service for carrying out various transactions anytime and anywhere via mobile phones, tablets, or others (Munoz-Leiva et al., 2019), making it faster, easier, and more efficient (Choudrie et al., 2018; Saeed & Xu, 2020). This service is a strategic goal and competitive advantage for banks (Afshan & Sharif, 2016). M-banking is an accounting information system application service for cash receipts and disbursements in banking. Services provided include payments, transfers, history, and others (Purwati et al., 2021).

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The development of m-banking requires investment (Baabdullah et al., 2019; Agyapong, 2020), although the success of its implementation cannot be guaranteed. Digital services also have risks and problems in the form of threats to security, privacy, the speed of technological change, and competition for other digital business innovations (Mbama et al., 2018; Zhang et al., 2018; Alkhowaiter, 2020). M-banking technology is influenced by user willingness and acceptance (Shankar et al., 2020). Failure to implement m-banking will reduce benefits (Ahad et al., 2012).

Information system failures have been studied extensively, including failures of digital services and m-banking (Sharma & Sharma, 2019). Users are not satisfied with the services provided (Asali, 2021). They really prioritize the security of m-banking services (Anouze & Alamro, 2020). Fraud risk is a barrier to m-mobile adoption (Danso et al., 2017).

The common model for acceptance of information systems, including m-banking, is the technology acceptance model (TAM). This model uses variables of perceived usefulness and ease of use, which influence attitudes, intention to use, and continued use (Davis, 1989). However, the TAM model is considered a simple technology acceptance model and is unable to capture the complexity of user interactions with technology (Lim, 2018). Empirically, TAM was developed by adding other variables (Baabdullah et al., 2019; De Leon, 2019). Previous research has attempted to facilitate an understanding of mobile payment adoption intentions across different contexts and generations (Alkhowaiter, 2020; Al-Saedi et al., 2020; Cao & Niu, 2019; Tang et al., 2021).

Specifically, Generation Z is the largest population (53.63%) in Indonesia compared to other generation groups (Rainer, 2023). Their existence is very important to consider in adopting mobile banking. They have the characteristic of being receptive to technological developments and innovations. They have knowledge and competence in using mbanking. Using mbanking becomes a lifestyle and improves their social status (Koenaite et al., 2021; Chawla & Joshi, 2023). Compared to other generations, Generation Z uses mobile payments more often than other generations, with 53% of their transactions made via mbanking (Imani & Anggono, 2020). As such, mbanking is expected to have more services that suit their needs.

Nevertheless, several studies demonstrate that TAM cannot explain the acceptance of m-banking among Generation Z (Fitriati et al., 2022; Hu et al., 2019; Foroughi et al., 2019). Increased use of m-banking is not influenced by perceived usefulness and ease of use (Alonso-Dos-Santos et al., 2020; Hu et al., 2019).

The novelty of this research is the development of a technology acceptance model as a successful model for m-banking acceptance. The model was developed with trust, self-efficacy, and enjoyment as external variables that influence the use of m-banking, especially in Generation Z.

Several previous studies also claim trust, self-efficacy, and enjoyment as predictors of intention to accept technology (Singh & Srivastava, 2020; Mahmood et al., 2023; Mostafa, 2020). Trust is confidence in m-banking's ability to carry out certain tasks in accordance

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with needs and expectations. Trust is claimed to influence the intention to use it (Baabdullah et al., 2019) through perceived usefulness and ease of use. Users with high self-efficacy can increase their use of m-banking (Kumar et al., 2020; Singh & Srivastava, 2020)

Enjoyment provides an affective reaction that can increase the intention to use m-banking (Lew et al., 2020; Hussein et al., 2021). However, several previous studies found different results. These results show that trust (Abdennebi, 2023; Singh & Srivastava, 2018), self-efficacy (Kumar et al., 2020; Firman & Nurjihadi, 2023), and enjoyment (Hasan & Gupta, 2020; Al-Sabaawi et al., 2023) does not affect the use of m-banking.

Therefore, this research aims to develop a technology acceptance model based on trust, self-efficacy, and enjoyment. This model is used to measure m-banking acceptance. The research has provided a theoretical contribution in the form of developing a conceptual model that considers the driving factors for mobile banking adoption, especially for Generation Z. The research results also provide a practical contribution as a reference source for developing strategies to increase the adoption and use of mobile banking technology, particularly for Generation Z.

# Literature Review and Hypotheses Development

#### **Technology Acceptance Model (TAM)**

TAM is a theoretical framework used to study the factors that influence the acceptance and adoption of new technologies. TAM is an extension of the Theory of Reasoned Action (TRA) (Davis, 1989). This theory explains that a person's subjective norm (SN) and attitude towards behavior (ATB) have an impact on their behavioral intention (BI) to adopt the technology. TAM is considered the most powerful, efficient, and influential model in innovation acceptance behavior (Pavlou, 2003).

TAM has been widely used as a model for accepting m-banking technology (Ajibade, 2018). This model elucidates that the intention to use m-banking is influenced by two main factors: perceived usefulness and perceived ease of use. Perceived usefulness refers to the extent to which users believe that technology will improve performance or productivity. Perceived ease of use refers to the extent to which users believe that technology is easy to use and does not require much effort (Davis, 1989).

# The Influence of Perceived Ease of Use, Usefulness, Attitude, and Intention to Use on M-Banking Usage

Perceived ease of use (PEU) is defined as the belief that the use of technology is not troublesome and requires great effort (Davis, 1989). In the context of m-banking, PEU is defined as the user's belief that m-banking is easy to use and learn (Tiwari et al., 2021). Previous research has confirmed that PEU influences perceived usefulness and attitudes towards m-banking (Kumar et al., 2020; Tiwari et al., 2021). Customers will use it if they find it easy and comfortable. They find it easy because of the simplicity of the applications,

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their capabilities, and the sophistication of the infrastructure used. TAM consistently finds that perceived convenience has a positive effect on perceived usefulness. Perceived usefulness is a stronger predictor than perceived ease of actual use of m-banking (Kumar et al., 2020; Chawla & Joshi, 2023; Koenaite et al., 2021; Singh & Srivastava, 2020).

Perceived usefulness (PU) is described as the extent to which customers feel m-banking services are useful (Tiwari et al., 2021). PU influences attitudes and will have an impact on m-banking adoption behavioral intentions (Kumar et al., 2020; Chawla & Joshi, 2023; Koenaite et al., 2021; Singh & Srivastava, 2020). PU is a predictor of intention to be willing to use m-banking. Users believe that using m-banking will create added value and improve their performance, quality, and efficiency. PU can influence the adoption and use of mobile banking in the future.

PU and PEU influence the use of m-banking. PU and PEU influence user attitude. A positive attitude towards technology determines the intention to use it. Attitude is an important factor in explaining technology use behavior. The higher the PEU level, the greater the likelihood of customers using m-banking (Singh & Srivastava, 2020). PEU influences PU but does not apply vice versa (Davis, 1989). Therefore, the hypotheses in this study are:

 $H_1$ : Perceived ease of use has a positive effect on perceived usefulness.

 $H_2$ : Perceived usefulness has a positive effect on attitude toward using.

**H**<sub>3</sub>: Perceived ease of use has a positive effect on attitude toward using.

 $\mathbf{H_4}$ : Attitude toward using has a positive effect on the intention to use.

**H**<sub>5</sub>: Intention to use has a positive effect on m-banking usage.

## The Influence of Trust on Perceived Usefulness and Ease of Use

Trust is defined as a user's belief that m-banking services can meet their needs. They believe the service provides results that suit their needs (Boonlertvanich, 2019). The highly competitive financial sector business must create long-term relationships of customer trust. Banks must have technological strength and innovation to build trust in their services and facilities, including m-banking. Trust is an important variable in online banking services (Baabdullah et al., 2019; Shankar et al., 2020). With high trust, customers believe they can avoid risks that may occur. They will feel the benefits and ease of using it (Baabdullah et al., 2019). Trust can influence perceived usefulness and ease of use (Baabdullah et al., 2019). In this case, Generation Z is generally more confident, adaptable, and motivated to grow and progress, especially in the use of technology (Benítez-Márquez et al., 2022). They better understand how to learn, operate, and control the use of mbanking applications (Magano et al., 2020). They become more skilled at operating the mbanking application, so they increasingly experience its usefulness and ease of use.

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Trust plays an important role in increasing customers' intentions to use m-banking for online financial transactions (Berraies et al., 2020). Trust is increased to retain them to continue using online banking services. It is stated (Zoghlami et al., 2018) that in an online environment, bank websites should contain information to reduce customer risk, which in turn increases trust. Trust is an important factor in creating long-term customer relationships that will influence the intention to adopt and continue to use m-banking services (Tarhini et al., 2019; Asnakew, 2020; Tiwari et al., 2021). Thus, the hypotheses of this study are:

 $H_6$ : Trust has a positive effect on perceived ease of use.

 $H_7$ : Trust has a positive effect on perceived usefulness.

# The Influence of Self-Efficacy on Perceived Usefulness and Ease of Use

Self-efficacy is defined as a customer's belief in their ability to use m-banking (Teimouri et al., 2018). Self-efficacy has been identified as an important factor influencing PU and PEU, which can motivate the use of m-banking (Singh & Srivastava, 2020). The self-efficacy theory developed by Bandura (1982) postulates that users with low self-efficacy will try to avoid using m-banking, but those who are confident will always be ready to use it. Confident users will use m-banking services. They have the necessary technical knowledge and skills to use it. As confidence increases, PU and PEU on m-banking will increase.

Empirically, self-efficacy has also been claimed as an external factor that influences the acceptance of technology by Generation Z. They want more appropriate m-banking services as a solution to their needs. M-banking is expected to have an attractive and friendly user interface (Kim et al., 2022). Gen Z, who have deeper and broader knowledge related to digital technology, will be more confident so they can increase their use of m-banking along with the development of digitalization (Priporas et al., 2017). In some previous studies, self-efficacy has been believed to influence user acceptance of adoption (Mahmood et al., 2023), usage and satisfaction (Kumar et al., 2020; Singh & Srivastava, 2020), as well as continued use of m-banking applications (Lim, 2018). Based on this explanation, the hypotheses were formulated:

H<sub>8</sub>: Self-efficacy has a positive effect on perceived ease of use.

**H**<sub>9</sub>: Self-efficacy has a positive effect on perceived usefulness.

#### The Influence of Enjoyment on Perceived Usefulness and Ease of Use

Davis (1989) expanded the TAM model by adding the perceived enjoyment factor. Enjoyment refers to the pleasure that users feel when using m-banking. The easier and more enjoyable it is to use a system or service, the more positive the user's attitude towards it. M-banking services should provide both utilitarian benefits (such as usability,

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ease of use, security, and privacy) and hedonic benefits or enjoyment (Baabdullah et al., 2019). If banks through m-banking platforms can ensure error-free, uncomplicated, and secure transactions, users will be happy to adopt m-banking to avail banking services (Shankar et al., 2020).

Users with a pleasant experience when using m-banking services will create a positive attitude and contribute to increased usage and overall satisfaction (Park, 2020). Enjoyment is a predictor of user usage and satisfaction (Davis, 1989; Mostafa, 2020). Mostafa (2020) found that enjoyment, usefulness, and ease of use factors are very important in influencing attitudes and intention to use m-banking.

Enjoyment is an external variable that is integrated into TAM (Nan et al., 2020). This variable has been shown to be an important predictor of m-banking acceptance. Benefits, ease of use, and perceived enjoyment can increase utilitarian motivation, effort expectations, and hedonic motivation to use m-banking. This motivation is very important in influencing the adoption behavior and continued use of m-banking. If users derive pleasure and emotional satisfaction from the experience of using m-banking, they are more likely to continue using it.

Perceived enjoyment is a form of pleasure motivation, which consists of emotional states such as entertainment, pleasure, and enjoyment (Lew et al., 2020). This enjoyment will give the user an affective reaction (positive or negative emotional response), which can motivate or avoid the urge to use m-banking. Perceived enjoyment focuses on individual hedonic motivation as demonstrated through satisfaction (cognitive reaction) and perceived enjoyment (affective reaction) from using m-banking (Lew et al., 2020; Hussein et al., 2021). Therefore, the following hypotheses were expressed:

 $H_{10}$ : Enjoyment has a positive effect on perceived ease of use.

 $\mathbf{H}_{11}$ : Enjoyment has a positive effect on perceived usefulness.

The literature review that has been compiled, the successful model for m-banking adoption developed by researchers, is illustrated in Figure 1.

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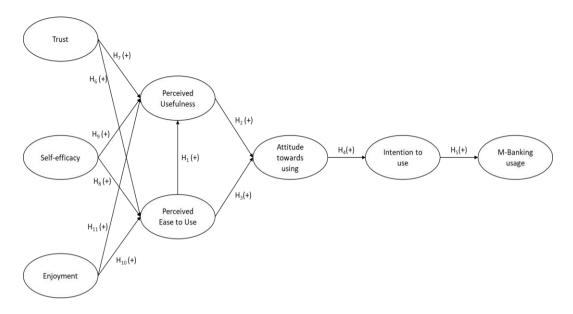


Figure 1 Model of M-Banking Acceptance Based on Trust, Self-Efficacy, and Enjoyment

# Research Method

The method used was a survey based on quantitative measurements. This research used primary data with a questionnaire instrument to collect data. The population in this study were m-banking users, i.e., students at Muhammadiyah University, Purwokerto, Indonesia. The population was chosen as one of the universities in Indonesia to facilitate research. Other populations can be studied further.

The minimum sample size was determined using power analysis. The minimum number of samples was ascertained by the significance level, the desired minimum R², and the largest number of arrow directions pointing toward the latent variable (Hair et al., 2022). Sampling used a non-probability sampling method with an accidental sampling technique. The sampling was carried out for two months. The number of respondents was 1066 students. Researchers used personal contacts to post google form links on various social media platforms. This study used a survey method, and non-response bias was evaluated (Senior et al., 2002) for the generalizability of this study. Initial and final respondent responses were tested for consistency.

The data collection instrument employed a questionnaire, including closed and open questionnaires. The closed questionnaire used a Likert scale. An open questionnaire was used to explore respondents' answers in more depth regarding the variable indicators studied. In this research, a questionnaire was developed based on a literature review regarding m-banking technology adoption models. The indicators used to measure variables are as in Table 1.

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The measurement used a five-point Likert scale. Based on Table 1, there were 26 items from 8 constructs combined in the conceptual research model (perceived usefulness, ease of use, attitude toward use, intention of use, m-banking usage, trust, self-efficacy, and enjoyment). Three items each were to measure perceived usefulness, ease of use, attitude toward using, intention of use, and m-banking usage, which refers to Davis (1989), Tiwari et al. (2021), Abdennebi (2023), Lew et al. (2020), Mostafa (2020), Abu-Taieh et al. (2022), Venkatesh et al. (2012), and Esawe (2022). The three items used to measure trust refer to Shankar et al. (2020) and Abu-Taieh et al. (2022). In addition, five items used to measure self-efficacy refer to Compeau and Higgins (1995) and Lew et al. (2020). To measure enjoyment, three items refer to Davis (1989), Mostafa (2020), and Lew et al. (2020).

Moreover, the non-response bias test was used to prevent sample bias. This research employed the common method bias (Podsakoff et al., 2003) with the FCVIF (full collinearity variance increased factor) value indicator (Kock, 2015). The FCVIF value was less than 3.3, indicating no significant bias.

The analysis technique used was component or variant-based Structural Equation Modeling (SEM) utilizing Partial Least Square (PLS). SEM-PLS is used to explain the relationship between latent variables (both reflective and formative). SEM-PLS is employed to estimate variable relationships with complex models (Hair et al., 2022).

Table 1 Variable Indicators

| Variable                | Indicator  | Sources  |  |  |
|-------------------------|--|--|--|--|
| Perceived<br>Usefulness | Effectiveness of carrying out banking financial transactions using m-banking | Davis (1989); Tiwari<br>et al. (2021);<br>Abdennebi (2023) |  |  |
|                         | Banking financial transactions are completed quickly when using m-banking.   |  |  |  |
|                         | The usefulness of m-banking services   |  |  |  |
| Perceived               | Ease of learning to use m-banking services                                   | Davis (1989); Lew  |  |  |
| Ease of Use             | Ease of using m-banking services   | et al. (2020); Tiwari                                      |  |  |
|                         | The level of ease of becoming skilled in using m-banking                     |  |  |  |
| Attitude                | Have a positive attitude towards using m-banking                             | Mostafa (2020)   |  |  |
|                         | It makes sense to use m-banking.   |  |  |  |
|                         | The desire that other customers should also adopt mbanking                   |  |  |  |
| Intention               | Interest in using m-banking, if you have access                              | Venkatesh et al.   |  |  |
| to Use                  | Interest in using m-banking to carry out banking financial transactions      | (2012); Esawe<br>(2022).                                   |  |  |
|                         | Interest in continuing to use m-banking in the future                        |  |  |  |
| M-banking               | Frequency of use of m-banking when having access                             | Venkatesh et al.   |  |  |
| usage                   | M-banking can be used to meet users' financial banking transaction needs.    | (2012); Esawe<br>(2022).                                   |  |  |
|                         | Users feel dependent on using m-banking to carry out financial transactions. |  |  |  |

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Table 1 Variable Indicators (cont')

| Variable  | Indicator   | Sources                             |  |  |  |
|-----------|---|-------------------------------------|--|--|--|
| Trust     | Trust in all services provided by m-banking   | Shankar et al.<br>(2020); Abu-Taieh |  |  |  |
|           | Trust that m-banking can provide the best financial services                        |                                     |  |  |  |
|           | according to user needs   | et al. (2022)                       |  |  |  |
|           | Trust in m-banking's care to always provide useful services now and in the future   |                                     |  |  |  |
| Self-     | Confidence in being able to quickly use m-banking from the                          | Compeau and                         |  |  |  |
| efficacy  | guidance provided   | Higgins (1995); Lew                 |  |  |  |
|           | Confidence in being able to use m-banking even though you have never used it before | et al. (2020)                       |  |  |  |
|           | Users' confidence in using m-banking after seeing other people use it               | other                               |  |  |  |
|           | User confidence can use m-banking if they have the time to learn it.                |                                     |  |  |  |
|           | User confidence can overcome problems when using mbanking.                          | en using m-                         |  |  |  |
| Enjoyment | Users feel happy when using m-banking.  | Davis (1989);                       |  |  |  |
|           | Users feel that m-banking services are positive and                                 | Mostafa (2020);                     |  |  |  |
|           | enjoyable.  | Lew et al. (2020)                   |  |  |  |
|           | Users feel excitement when using m-banking.   |                                     |  |  |  |

According to Hair et al. (2022), the SEM-PLS model built consists of two sub models, namely outer and inner models. This model is built based on the theories used so that it meets content validity. Outer model evaluation includes indicator validity, reliability, convergence validity, internal consistency reliability and discriminant validity. The evaluation of the internal model used the value of the coefficient of determination (R<sup>2</sup>), showing a measure of the accuracy of the prediction model and the significance value of the path coefficient, as well as a hypothesis test.

# Result and Discussion

Data collection was carried out for two months. The total sample was 1,066 students using m-banking. Based on the collected research data, the research respondents belonged to Generation Z. The respondents were 43.6% male and 56.4% female. In general, they had experience using m-banking. They used it for their various financial transactions. Descriptive statistics of the research variables are presented in Table 2.

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Table 2 Respondents' Responses

| Variable                 | Indicator | Score |
|--------------------------|-----------|-------|
| Trust                    | Trust1    | 4.08  |
|                          | Trust2    | 4.09  |
|                          | Trust3    | 4.17  |
| Self-efficacy            | SE1       | 4.04  |
|                          | SE2       | 3.99  |
|                          | SE3       | 4.08  |
|                          | SE4       | 4.10  |
|                          | SE5       | 3.86  |
| Enjoyment                | E1        | 3.97  |
|                          | E2        | 4.09  |
|                          | E3        | 3.89  |
| Perceived Usefulness     | PU1       | 4.14  |
|                          | PU2       | 4.29  |
|                          | PU3       | 4.20  |
| Perceived of Ease of Use | PEoU1     | 4.24  |
|                          | PEoU2     | 4.24  |
|                          | PEoU3     | 4.16  |
| Attitude                 | Att1      | 4.18  |
|                          | Att2      | 4.18  |
|                          | Att3      | 4.16  |
| Intention to Use         | Int1      | 4.09  |
|                          | Int2      | 3.92  |
|                          | Int3      | 4.08  |
| M-Banking Usage          | Use1      | 3.96  |
|                          | Use2      | 4.09  |
|                          | Use3      | 3.95  |

Based on Table 2, respondents' perceptions of trust, self-efficacy, enjoyment, usefulness, convenience, attitude, intention to use, and m-banking usage had an average score of 3.86-4.29, including a high score. Respondents had high confidence that the m-banking application had provided the services they needed. They also believed they could use m-banking in a short time, even though they had never used it before. Problems that occurred could be resolved immediately.

Users felt pleasure and had a positive attitude when using m-banking. Perceived usefulness and ease of use also had high scores. Users had the perception that m-banking is useful in enabling financial transactions to be carried out safely, effectively, and efficiently. They really needed it as a service to complete financial transactions online. The m-banking application was felt to be easy to learn and operate, making it easy to become skilled. Perceived usefulness and convenience could change user attitudes and interests. The average score for actual use of m-banking was also in the high category. They used it routinely and regularly to complete their financial transactions. Using the m-banking application means that financial transactions can be carried out anywhere and at any time easily.

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Measurement model testing was carried out to determine the quality (validity and reliability) of indicators. Validity and reliability tests used factor loading significant criteria, R<sup>2</sup> value, AVE (average variance extracted), composite reliability (CR), and HTMT (Hair et al., 2022). The measurement model test results are presented in Tables 3 and 4.

The results of testing the measurement model revealed that the outer loading value was more than 0.7, the p-value was less than 0.05, the CR (composite reliability) was more than 0.7, and the AVE (average variance extracted) was more than 0.5 (Table 3). Table 4 shows that all HTMT values were <0.9, so it can be stated that all constructs were valid in terms of discriminant validity. Based on these results, it can be said that the measurement model met the validity and reliability criteria (Hair et al., 2022). Thus, it can be said that all indicators used in this research reflected latent variables.

**Table 3** Measurement Model Test Results

| Variable             | Indicator | Outer L  | oading  | CD   | A)//F |  |
|----------------------|-----------|----------|---------|------|-------|--|
| Variable             | Indicator | Original | p-value | CR   | AVE   |  |
|                      | PU1       | 0.87     | 0.00    |      |       |  |
| Perceived Usefulness | PU2       | 0.79     | 0.00    | 0.88 | 0.71  |  |
|                      | PU3       | 0.88     | 0.00    |      |       |  |
| Perceived of Ease of | PEoU1     | 0.84     | 0.00    |      |       |  |
|                      | PEoU2     | 0.89     | 0.00    | 0.89 | 0.73  |  |
| Use                  | PEoU3     | 0.81     | 0.00    |      |       |  |
|                      | Att1      | 0.88     | 0.00    |      |       |  |
| Attitude             | Att2      | 0.87     | 0.00    | 0.90 | 0.75  |  |
|                      | Att3      | 0.84     | 0.00    |      |       |  |
| Intention            | Int1      | 0.85     | 0.00    |      |       |  |
|                      | Int2      | 0.83     | 0.00    | 0.87 | 0.69  |  |
| to use               | Int3      | 0.81     | 0.00    |      |       |  |
|                      | Use1      | 0.83     | 0.00    |      |       |  |
| M-banking usage      | Use2      | 0.84     | 0.00    | 0.68 | 0.87  |  |
|                      | Use3      | 0.81     | 0.00    |      |       |  |
|                      | Trust1    | 0.80     | 0.00    |      |       |  |
| Trust                | Trust2    | 0.90     | 0.00    | 0.89 | 0.73  |  |
|                      | Trust3    | 0.84     | 0.00    |      |       |  |
|                      | SE1       | 0.74     | 0.00    |      |       |  |
|                      | SE2       | 0.69     | 0.00    |      |       |  |
| Self-efficacy        | SE3       | 0.71     | 0.00    | 0.86 | 0.56  |  |
|                      | SE4       | 0.86     | 0.00    |      |       |  |
|                      | SE5       | 0.72     | 0.00    |      |       |  |
|                      | E1        | 0.93     | 0.00    |      |       |  |
| Enjoyment            | E2        | 0.87     | 0.00    | 0.92 | 0.79  |  |
|                      | E3        | 0.87     | 0.00    |      |       |  |

The structural model shows the relationship between latent variables (exogenous and endogenous) in accordance with the research objectives. These variables included perceived usefulness, ease of use, attitude, intention to use, m-banking usage, trust, self-efficacy, and enjoyment. Evaluation of the structural model encompassed the significance test of the path coefficient and R<sup>2</sup> (coefficient of determination) (Hair et al., 2022). The evaluation results are presented in Table 5 and Figure 2.

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Table 4 HTMT Result

|                  | 1-3  | 1-1  | 1-1  | 1 -> | /->  | 4-1  | (-\  | 1-1 |
|------------------|------|------|------|------|------|------|------|-----|
|                  | (1)  | (2)  | (3)  | (4)  | (5)  | (6)  | (7)  | (8) |
| PU               |      |      |      |      |      |      |      |     |
| PEoU             | 0.77 |      |      |      |      |      |      |     |
| Attitude         | 0.84 | 0.76 |      |      |      |      |      |     |
| Intention of use | 0.79 | 0.68 | 0.89 |      |      |      |      |     |
| M-banking usage  | 0.65 | 0.65 | 0.79 | 0.83 |      |      |      |     |
| Trust            | 0.69 | 0.66 | 0.87 | 0.78 | 0.76 |      |      |     |
| Self-efficacy    | 0.46 | 0.61 | 0.66 | 0.70 | 0.64 | 0.67 |      |     |
| Enjoyment        | 0.70 | 0.59 | 0.80 | 0.75 | 0.68 | 0.86 | 0.61 |     |

Note: (1) = PU; (2) = PeoU; (3) = Attitude; (4) = M-banking usage; (5) = Trust; (6) Self-efficacy; (7) = Enjoyment.

The influence of exogenous variables on endogenous variables can be seen from the path coefficient value. Table 5 and Figure 2 show that at the significance level  $\alpha$  = 5%, all hypotheses could be accepted.

Table 5 Path Coefficient, Statistic-T, P-Value, and R<sup>2</sup>

| Hypothesis                         | ·                   | Path coefficient | t-statistic | p-value | Conclusion |
|------------------------------------|---------------------|------------------|-------------|---------|------------|
| PEoU → PU                          | H <sub>1</sub> (+)  | 0.43             | 11.42       | 0.00    | Supported  |
| PU → Attitude                      | $H_{2}(+)$          | 0.48             | 11.46       | 0.00    | Supported  |
| PEoU → Attitude                    | H <sub>3</sub> (+)  | 0.33             | 8.90        | 0.00    | Supported  |
| Attitude → Intention to use        | H <sub>4</sub> (+)  | 0.73             | 37.12       | 0.00    | Supported  |
| Intention to use → M-banking usage | H <sub>5</sub> (+)  | 0.48             | 12.63       | 0.00    | Supported  |
| Trust → PEoU                       | H <sub>6</sub> (+)  | 0.25             | 6.95        | 0.00    | Supported  |
| Trust → PU                         | H <sub>7</sub> (+)  | 0.14             | 3.24        | 0.01    | Supported  |
| Self-efficacy → PEoU               | H <sub>8</sub> (+)  | 0.30             | 10.25       | 0.00    | Supported  |
| Self-efficacy → PU                 | H <sub>9</sub> (+)  | 0.07             | 2.28        | 0.02    | Supported  |
| Enjoyment → PEoU                   | $H_{10}(+)$         | 0.16             | 5.56        | 0.00    | Supported  |
| Enjoyment → PU                     | H <sub>11</sub> (+) | 0.31             | 6.80        | 0.00    | Supported  |
| $R^2$ (PU)                         | 0.49                |                  |             |         |            |
| R <sup>2</sup> (PEoU)              | 0.38                |                  |             |         |            |
| R <sup>2</sup> (Attitude)          | 0.54                |                  |             |         |            |
| R <sup>2</sup> (Intention to use)  | 0.53                |                  |             |         |            |
| R <sup>2</sup> (M-banking usage)   | 0.46                |                  |             |         |            |

The results of structural model testing (Table 5) uncovered that the path coefficient was positive (p-value = 0.00). This indicates that if trust, self-efficacy, and enjoyment increase, the perception of ease of use and usefulness will also be higher. This condition will increase attitudes, intentions to use, and use of m-banking among users, especially Generation Z. This is explained in detail in the next paragraph.

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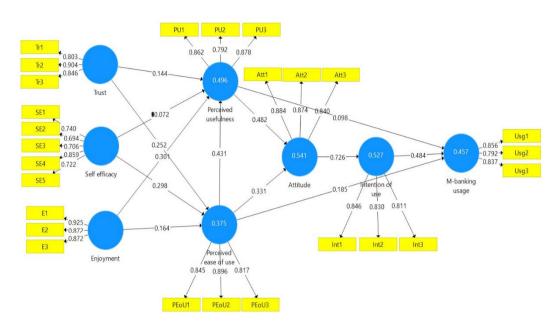


Figure 2 SEM-PLS Structural Model Result

#### Discussion

#### The influence of perceived ease of use on perceived usefulness

Based on Table 5, the first hypothesis was supported. This shows that users with a high perception of ease of use will influence the perception of usefulness. The results of this study support TAM. Perceived ease of use is an important construct of the perceived benefits of m-banking users. The respondents of this research were m-banking users belonging to Generation Z. Because they are used to using technology, including m-banking, they found it easy to learn and use m-banking. Easy-to-use m-banking technology allows users to try all the features. They felt the use of all the features provided by m-banking. They did not require much effort and trouble to use. Ease of use will increase the perceived benefits. The relationship between PEoU and PU in the M-banking context has also been studied (Kumar et al., 2020; Lew et al., 2020; Tiwari et al., 2021; Abdennebi, 2023).

# The influence of perceived usefulness and ease of use on attitude toward using mbanking

Table 5 demonstrated that the second and third hypotheses were supported. Perceived usefulness and ease of use had a positive influence on attitudes towards using m-banking. This shows that users felt usefulness and ease of use, and they had a positive attitude towards using m-banking. These two variables are the main factors influencing the acceptance of m-banking in TAM.

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Perceived usefulness is an essential factor in shaping user attitudes towards m-banking. Respondents had a positive attitude towards the use of m-banking. This is because they felt that when using m-banking, they could complete banking transactions more quickly, easily, and comfortably. Users believed that the use of m-banking would create added value and improve performance, quality, and efficiency. This is supported by Tiwari et al. (2021) and Abdennebi (2023).

In this research, perceived ease of use is defined as the level of ease of using m-banking. Users felt that the features provided by m-banking are easy to learn, use, and access. They had a positive attitude towards m-banking because they felt interacting with m-banking was simple, easy to understand, and clear. The simplicity of the m-banking application is an important aspect of its successful implementation. Thus, the easier it is to use m-banking, the more positive the user will be. The results of this research showed that perceived ease of use also plays an important role in encouraging bank customers to adopt and use m-banking. These results align with Akour et al. (2022), Althunibat et al. (2022), and Rabaa'i and AlMaati (2021).

#### The influence of attitude toward using on intention to use m-banking

Table 5 details that the results of testing the fourth hypothesis showed a p-value < 0.05, so it can be stated that the fourth hypothesis was supported. Attitude toward using had a positive effect on the intention to use m-banking. Attitude toward using is a user's positive or negative attitude towards using m-banking. A positive attitude towards using m-banking will naturally lead to the intention to use it more often. Their intentions and ways of utilizing m-banking will be consistent with their attitude towards it.

The results of this study support previous research. They have proven that attitudes are very important in shaping the intentions and behavior of users of various innovative technologies. Researchers also found that attitudes have a positive effect on m-banking users' behavioral intentions (Abu-Taieh et al., 2022; Naruetharadhol et al., 2021).

#### The influence of intention to use on m-banking usage

Table 5 reveals that the influence of intention to use on m-banking usage had a p-value < 0.05. This means that the fifth hypothesis was supported. The results of this study support TAM. Behavioral intentions had a positive influence on actual behavior. The more users have strong intentions, the more actual use of m-banking will increase. Strong intentions will show his willingness and how much effort he makes to use and continue to use m-banking.

Respondents believed m-banking has been designed to be easy to use and allows users to complete transactions more quickly. They also got information and recommendations from friends to use m-banking. This will increase the desire and intention to use it and even continue to use it again (Phuong et al., 2020). The results of this study corroborate with Ali et al. (2016) and Al-Qeisi et al. (2015).

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#### The influence of trust on perceived ease of use and usefulness

Based on Table 5, it is known that the sixth and seventh hypotheses were not rejected. This means that trust had a positive effect on perceived ease of use and usefulness. Users with a high level of trust increasingly felt the convenience and usefulness when using mbanking.

Generation Z users understood how to learn, operate, and control the use of m-banking. They are increasingly skilled at operating m-banking, so they increasingly experience its usefulness and ease of use.

Generation Z has many friends who often share experiences and information, including about m-banking. Respondents' choice to use m-banking depends on the choice of their community. They consider friends' opinions more when making decisions. The use of m-banking is usually recommended by friends. Opinions from the surrounding environment can increase user trust and confidence. This will certainly increase the perception of ease and usefulness, which can ultimately increase the frequency of m-banking use.

Respondents who are Generation Z believed that m-banking had met their banking transaction needs, even though they sometimes experienced m-banking problems. With knowledge, experience, and skills in using m-banking, respondents were careful in disclosing personal and financial m-banking information. They also believed m-banking had provided facilities and features to resolve problems appropriately and quickly. With high trust, users were sure they could avoid risks or obstacles that might occur. They will feel the benefits and ease of using it. Trust is very important to mitigate the uncertainty of financial transactions to motivate the use of m-banking. Trust is an important factor that must be considered to create long-term relationships with users. Hence, they will have the intention to continue using m-banking (Tarhini et al., 2019; Asnakew, 2020; Tiwari et al., 2021).

#### The influence of self-efficacy on perceived ease of use and usefulness

Based on the results of the data analysis (Table 5), it is known that  $H_8$  and  $H_9$  were supported. This means that self-efficacy had a positive effect on perceived ease of use and usefulness. Users with high self-confidence are more likely to experience the ease and benefits of using m-banking. The results of this research are the development of the TAM model.

The sample for this research was Generation Z students. They are ambitious, self-confident, open to change, and always want to develop and progress. Because they were born in a digital environment, they prefer to use m-banking when carrying out banking transactions compared to conventional platforms. They considered m-banking to be uncomplicated, easy to learn, and operate. The application has been designed to be more convenient, complete, and easy to navigate. This application is more popular among Generation Z.

Mobile banking acceptance model for Generation Z: ...

Respondents felt that online payment transactions were often faced with the risk of system failure or fraud. This causes panic for them. However, because they are Generation Z, who have high self-efficacy, they can overcome pressure and reduce pessimism in their use. They have more time to gain information and experience using mbanking. This will reduce concerns about this risk occurring. They can utilize all m-banking facilities and features efficiently. Therefore, they felt the ease and usefulness of mbanking. Self-efficacy can be an antecedent of perceived usefulness and ease of use in increasing attitudes towards using and intention to use m-banking continuously.

This study supports Kumar et al. (2020), Singh and Srivastava (2018), and Changchit et al. (2020), which state that self-efficacy has a positive influence on intention to use mbanking. Users with a high level of self-efficacy are more motivated to use m-banking.

#### The influence of enjoyment on perceived ease of use and usefulness

The research results (Table 5) showed that  $H_{10}$  and  $H_{11}$  were also supported. This indicates that enjoyment had a positive effect on the perceived essay of use and usefulness of using m-banking. The research results succeeded in developing TAM.

Enjoyment refers to the extent to which the activity of using m-banking is felt to be enjoyable. In the TAM model, enjoyment is one of the important external factors that determines perceived usefulness, ease of use, and intention to use it. Enjoyment has a positive influence on the perceived ease of use and usefulness of using m-banking. Users felt that banks have developed mobile banking to carry out banking transactions according to their needs. Attitudes and intentions to use m-banking will increase if they feel happy.

Users also felt that the bank has increased the diversification of m-banking services, so that it could meet user needs. In addition, users felt that the m-banking application had been designed to be simple and interactive. They enjoyed using all the m-banking facilities or features they needed. This will increase perceived ease of use and usefulness, which in turn will have an impact on increasing attitudes, intentions to use, and use of m-banking. Furthermore, perceived enjoyment is an important determining factor in m-banking adoption. The results of this study are in line with previous research. In the TAM model, enjoyment is one of the most important external factors that determine perceived usefulness, ease of use, and intention to use (To & Trinh, 2021; Lew et al., 2020).

This study found that Generation Z users had high perceptions of trust, self-efficacy, enjoyment, usefulness, ease of use, attitude, intention to use, and use of m-banking. M-banking has become part of Generation Z's lifestyle. This study also uncovered that trust, self-efficacy, and enjoyment are significant predictors of perceived usefulness and ease of use, affecting attitudes, intention to use, and use of m-banking. This study recommends that m-banking applications should be designed to be easy to use and allow users to complete transactions faster. Applications should provide services that are easy, safe, innovative, and can always be adjusted to the needs of their users.

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The theoretical contribution of these results is the development of an m-banking acceptance model for Generation Z. The model is an extension of TAM with trust, self-efficacy, and enjoyment as external variables. Further research needs to examine the Generation Z m-banking acceptance model that has been found.

# Conclusion

M-banking has been accepted by Generation Z. M-banking was chosen because its services can be used anytime, anywhere, and under any conditions. This application has provided the services they need. They had high perceptions of trust, self-efficacy, enjoyment, usefulness, ease of use, attitude, intention to use, and m-banking usage.

This research claims that trust, self-efficacy, and enjoyment are predictors of perceived usefulness, ease of use, attitude, intention to use, and m-banking usage. Users considered privacy, security, time, and performance risks, as well as other related risks. They believed that the potential risks that might occur could be resolved appropriately and quickly. These problems and risks did not cause a loss of user trust. Generation Z also had high confidence in being able to overcome problems and foster optimism in its use. They are known to be more innovative and optimistic and spend much time using digital technology. Trust and confidence in the m-banking application will increase perceptions of ease, usefulness, attitude, intention to use and m-banking usage.

This research provides recommendations that m-banking applications should be designed to be easy to use and allow users to complete transactions more quickly. Users had high self-efficacy, could operate the application easily and safely, and could complete financial transactions quickly. The ease and usefulness of the application will create attitudes and intentions to use m-banking on an ongoing basis and will recommend it to other friends. Generation Z users did not only prioritize ease of use but also prioritized usability and superiority of application services. As such, the m-banking application should also guarantee security and comfort for its users. Applications that receive a positive response from their users will encourage their use and continued use.

The theoretical contribution of these results is the development of an m-banking acceptance model for Generation Z. This model succeeded in expanding the TAM by adding trust, self-efficacy, and enjoyment as external variables. However, in the results of previous research, there is still a research gap regarding the role of these variables. Therefore, for further research, it is necessary to examine the Generation Z m-banking acceptance model that has been produced.

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#### **Conflicts of Interest**

The authors declare no conflict of interest. The funders had no role in the design of the study, in the collection, analyses, or interpretation of data, in the writing of the manuscript, or in the decision to publish the results.



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