The Determination of Perceived Ease of Use and Security on the Usage Decisions of the DANA E-Wallet by Generation Z

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Abstract. This study explores the influence of perceived ease of use, service features, and security on the usage decisions of the DANA e-wallet among Generation Z in Garut Regency. Using a quantitative approach with Structural Equation Modeling based on Partial Least Squares (SEM-PLS), data were collected from 100 active Generation Z users of the DANA application. The results demonstrate that perceived ease of use and security have a significant positive impact on usage decisions, while service features do not significantly influence these decisions. These findings align with the Technology Acceptance Model (TAM), highlighting the importance of an intuitive and secure user experience in driving technology adoption. Generation Z in Garut prioritizes simple navigation and strong data protection over the completeness of service features. This preference reflects the specific challenges of semi-urban areas, such as varying digital infrastructure and user familiarity with technology. Developers, such as DANA, are advised to enhance navigation simplicity, strengthen data protection, and improve transaction security to foster user trust and loyalty.This study contributes to strategies for enhancing e-wallet adoption and supports broader financial inclusion in Indonesia's semi-urban regions.

Keywords: Perceived ease of use, service features, security, usage decisions, Generation Z, DANA e-wallet, SEM-PLS.

Introduction

In recent years, the development of digital technology has transformed the way people conduct financial transactions. One prominent innovation is the electronic wallet (e-wallet), which offers convenience, efficiency, and flexibility in payments. In Indonesia, e-wallets are becoming increasingly popular, especially among younger generations such as Generation Z, known as digital natives. One widely used e-wallet platform is DANA, which provides various features such as bill payments, money transfers, and online transactions. However, despite the growing adoption of e-wallets, challenges remain in understanding the factors influencing usage decisions, particularly regarding perceived ease of use, service features, and security.

Garut Regency, a semi-urban region in West Java, Indonesia, represents an area with unique characteristics that influence technology adoption. The region has seen steady growth in digital infrastructure, with increasing access to reliable internet services and the proliferation of smartphones. However, digital literacy among its population remains varied, creating a blend of early adopters and late entrants to technology use. Generation Z in Garut exhibits adaptive consumption habits, blending traditional practices with modern digital tools. This context makes the region an ideal case study for understanding how semi-urban dynamics affect e-wallet adoption. Unlike metropolitan areas where digital ecosystems are mature, semi-urban regions face distinct challenges and opportunities, such as limited physical banking infrastructure and the potential for e-wallets to bridge financial inclusion gaps.

Most previous studies have focused on user behavior in general or across broader age groups, without considering the unique characteristics of Generation Z. This generation has a distinctive digital lifestyle,

making their responses to technology, including e-wallets, different from those of other generations (Laukkanen, 2007; Venkatesh et al., 2003). Recent studies suggest that Generation Z has unique preferences in selecting technology based on personal values and user experience (Chaffey, 2022). Additionally, research on financial technology adoption in Indonesia has primarily been conducted in metropolitan areas such as Jakarta or Surabaya, while semi-urban regions like Garut Regency remain underexplored (Amin, 2014). This study addresses this gap by focusing on Generation Z in Garut Regency, a region with significant potential for technology adoption growth.

Theoretically, many previous studies have adopted the Technology Acceptance Model (TAM), emphasizing perceived usefulness and perceived ease of use as the primary determinants of technology adoption (Davis, 1989). However, security aspects are often excluded as a core component of this framework, despite their critical role in influencing user trust in financial technology (Gefen et al., 2003). Recent studies highlight the importance of trust and security in financial technology, particularly in enhancing user loyalty (Alam et al., 2022). Moreover, although service features are an essential element of service quality, their impact on e-wallet usage decisions has not been comprehensively integrated into theoretical frameworks (Parasuraman et al., 2005). This study complements the theoretical framework by integrating perceived ease of use, service features, and security to understand e-wallet usage decisions.

Empirical research on e-wallet adoption in Indonesia has mostly focused on behavioral intention or general technology adoption levels (Davis et al., 1989; Pavlou, 2003). Recent studies highlight that factors such as user experience and service personalization play a crucial role in shaping user decisions (Kim et al., 2021). Research on actual usage decisions, particularly in the context of Generation Z, remains limited. Furthermore, most studies emphasize benefits such as efficiency and convenience, while security is often regarded as a secondary variable (Alalwan et al., 2015). This study addresses the empirical gap by focusing on actual usage decisions influenced by perceived ease of use, service features, and security. By incorporating the semi-urban characteristics of Garut and the unique digital behaviors of its Generation Z population, this study provides a nuanced understanding of technology adoption in such contexts. This study aims to identify the extent to which perceived ease of use, service features, and security affect e-wallet usage decisions among Generation Z in Garut Regency. By addressing research, theoretical, and empirical gaps, the findings of this study are expected to contribute to the development of e-wallet services, marketing strategies, and broader support for digital financial inclusion in Indonesia.

Methods

This study employs a quantitative approach using Structural Equation Modeling based on Partial Least Squares (SEM-PLS) analysis. This approach was chosen because it can simultaneously measure the relationships between latent variables and indicator variables, and it is well-suited for studies with relatively small sample sizes (Hair et al., 2021). The research hypothesis tested is that perceived ease of use, service features, and security influence the usage decisions of the DANA e-wallet among Generation Z in Garut Regency.

The population in this study consists of Generation Z individuals in Garut Regency who use the DANA e-wallet. Generation Z is defined as individuals born between 1997 and 2012 (Francis & Hoefel, 2018). The research sample comprises 100 respondents selected using a purposive sampling technique with the following criteria:

1. Respondents aged 18–26 years.
2. Respondents who have used the DANA e-wallet at least three times in the past three months.
3. Respondents residing in Garut Regency.

Most respondents in this study are Generation Z aged 21–23 years (50%), with 60% male and 40% female. Most respondents are students (60%) with the last level of education being high school or vocational school (50%). As active users of the DANA e-wallet, most respondents have used the application for more than 6 months (40%) to over 1 year (40%), with a usage frequency exceeding six times per month (75%). The primary purpose of using e-wallets is for bill payments and daily needs (50%), followed by money transfers (30%) and online shopping (20%). These findings indicate that the respondents tend to have dynamic activities and a high need for easily accessible digital payment solutions. Generation Z in Garut Regency generally utilizes the DANA e-wallet to support mobility and efficiency in daily transactions, reflecting adaptive digital consumption patterns integrated into their lifestyles.

Data were collected using a structured questionnaire distributed online via digital platforms such as Google Forms. The questionnaire was designed using a 5-point Likert scale (1 = strongly disagree to 5 =

strongly agree) to measure perceived ease of use, service features, security, and e-wallet usage decisions. Each variable was measured using indicators validated in previous studies:

Exogenous Variables:

1. X1, Perceived Ease of Use (Davis, 1989): Ease of learning, user interaction, and accessibility.
2. X2, Service Features (Parasuraman et al., 2005): Feature completeness, innovation, and usefulness.
3. X3, Security (Gefen et al., 2003): Trust in data protection and transaction security.

Endogenous Variable: Y, Usage Decision (Pavlou, 2003): Usage frequency, loyalty, and user satisfaction.

The SEM-PLS approach was chosen due to its flexibility in handling non-normal data distributions and its capability to manage models with latent variables as well as reflective and formative indicators. Additionally, this method is effective for validating theoretical models that are still developing (Hair et al., 2021).

1. Validity and Reliability Tests. Convergent validity was assessed using Average Variance Extracted (AVE), with AVE values required to exceed 0.5. Reliability was tested using Composite Reliability (CR) and Cronbach's Alpha, with a cut-off value of ≥ 0.7.
2. Structural Model Testing. Conducted using SEM-PLS software such as SmartPLS. Examined causal relationships between variables based on path coefficients (t-value > 1.96 and p-value < 0.05).
3. Significance and Hypothesis Testing. Used bootstrapping to test the significance of relationships between latent variables.

The research stages began with developing the questionnaire based on the theoretical framework to ensure alignment with the study's objectives. Data were then collected from Generation Z respondents residing in Garut Regency using a structured online questionnaire. The collected data were processed using SmartPLS to assess validity, reliability, and the relationships between variables. Finally, conclusions were drawn, and recommendations were formulated based on the results of the analysis.

Result and Discussion

The results of the data analysis indicate that the measurement model (outer model) fulfills the validity and reliability criteria. Convergent validity is achieved, as shown by all indicators having a loading factor greater than 0.7 and Average Variance Extracted (AVE) values exceeding 0.5. Furthermore, composite reliability (CR) and Cronbach's Alpha for each construct are above the threshold of 0.7, confirming the internal consistency of the data.

The structural model (inner model) has also been evaluated, and the results demonstrate that the proposed relationships among variables are supported. Path coefficients and t-values indicate significant relationships between constructs, and the R-squared value suggests a strong explanatory power of the model. The structural model is illustrated in Figure 1, providing a clear visualization of the relationships between perceived ease of use, service features, security, and usage decisions.
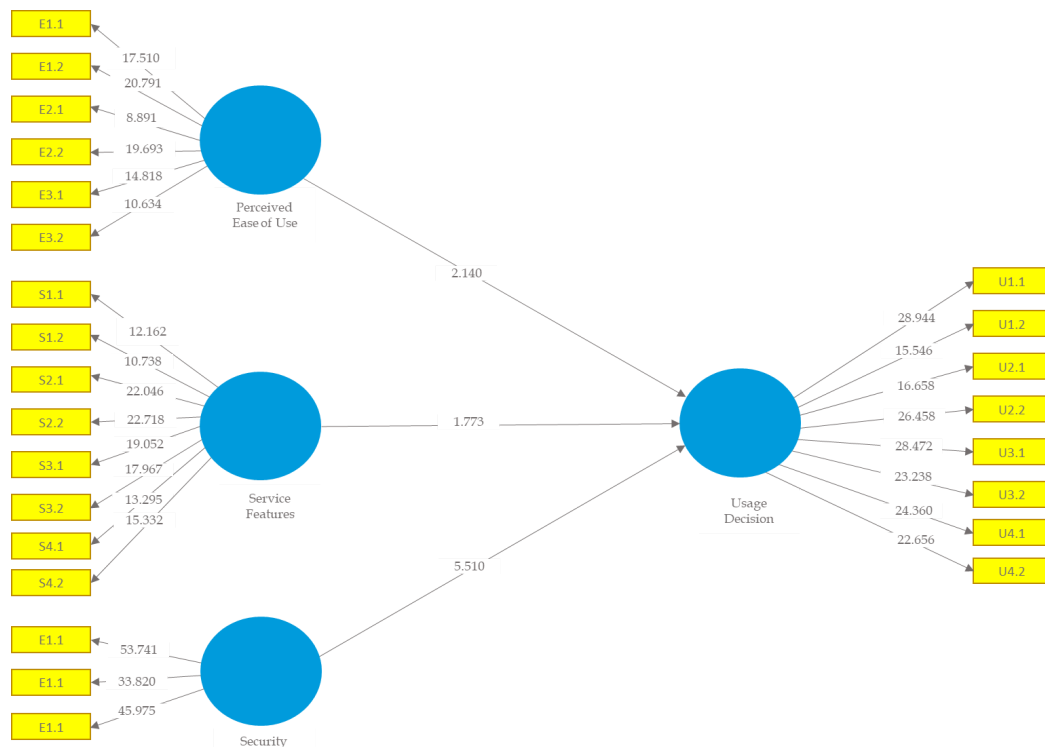
Figure 1. Inner Model

Based on the research findings, the variables of perceived ease of use, service features, and security have varying effects on the usage decisions of the DANA application among Generation Z in Garut Regency. Perceived ease of use has been proven to have a positive and significant influence on usage decisions. As digital natives, Generation Z prioritizes applications that are easy to learn, flexible, and provide a seamless user experience. This emphasizes that ease of use is a key factor driving technology adoption, consistent with the Technology Acceptance Model (TAM). This finding is also supported by recent research asserting that a simple and efficient user experience enhances the decision to adopt digital technology (Chong, 2013; Yadav & Dabhade, 2022).

The dimensions of "ease of learning" and "flexibility" are the most significant indicators in this study. Users perceive the DANA application as easy to learn and quick to master, aligning with the Cognitive Load Theory, which states that technologies reducing cognitive load are more likely to be adopted by users (Sweller, 2011). Additionally, the "flexibility" indicator shows that the DANA application meets users' transaction needs in various situations, adding value in a semi-urban context like Garut Regency. Generation Z also appreciates the application's ease of access anywhere, which is a crucial factor in supporting their high mobility. These findings align with other studies showing that flexibility and accessibility are critical to the success of digital technology among younger generations (Bukhari et al., 2020; Alam et al., 2022).

The semi-urban characteristics of Garut Regency, such as limited access to advanced technology infrastructure, varying internet speeds, and traditional consumption patterns, significantly influence the preferences of Generation Z. Unlike metropolitan users who may emphasize innovative features, users in semi-urban areas prioritize essential functionalities like ease of use and transaction security. These priorities align with the daily challenges faced by semi-urban users, such as sporadic internet connectivity and the need for reliable and user-friendly tools to support basic transactions. Literature discussing technology adoption in semi-urban areas suggests that these constraints can shift user preferences towards simplicity and reliability over additional features (Laukkanen, 2007; Alam et al., 2022). Thus, these findings confirm that the semi-urban context plays a crucial role in shaping the adoption patterns of digital tools like e-wallets.

Another noteworthy indicator is "ease of switching between features," highlighting the importance of a responsive user interface and intuitive application design. In the context of Generation Z, seamless navigation creates a positive user experience and encourages technology adoption (Kim et al., 2021). Future research could expand the scope by adding variables such as trust and usefulness to explore deeper factors influencing e-wallet usage decisions. Additionally, qualitative approaches could be employed to better

understand user preferences, particularly regarding feature innovation and expected user experiences. This research significantly contributes to understanding the dynamics of technology user behavior in semi-urban areas while offering strategic implications for e-wallet service development in Indonesia.

In contrast, the service features variable does not have a significant effect on the usage decisions of the DANA e-wallet among Generation Z in Garut Regency. This finding contradicts several previous studies, which suggest that service features, such as completeness and innovation, are often key factors in attracting digital technology users (Parasuraman et al., 2005; Lu et al., 2019). One potential reason for this result is that Generation Z prioritizes the overall user experience, such as ease of use and security, over the completeness of service features. This aligns with recent research indicating that young users tend to regard service features as a basic attribute, making their influence on usage decisions less significant (Yadav & Dabhade, 2022).

Dimensions encompassing feature completeness, innovation, and usefulness appear to have less impact on the decisions of Generation Z in Garut Regency. For instance, indicators such as "feature completeness for transaction needs" are considered less important than aspects like navigation ease or application accessibility. This can be explained by the Overchoice Effect theory (Iyengar & Lepper, 2000), which states that too many choices or features can overwhelm users and diminish the appeal of an application. For Generation Z, overly diverse service features may be seen as irrelevant or excessive if the core features of the application already meet their basic needs.

These findings highlight the need for further research to explore other factors more influential on e-wallet usage decisions, such as user experience or perceived value. Future studies could also investigate whether the impact of service features can be enhanced through personalization approaches, where specific features are tailored to individual user preferences (Kim et al., 2021). Additionally, qualitative approaches could be used to understand the reasons behind Generation Z's perceptions of e-wallet service features. Thus, this research provides new insights that the success of e-wallets does not solely rely on service features but also on how these features are designed to create enjoyable and relevant user experiences.

Conclusion

Based on the research findings, it can be concluded that the variables of perceived ease of use, service features, and security have varying effects on the usage decisions of the DANA application among Generation Z in Garut Regency. Perceived ease of use and security were found to have a positive and significant influence on usage decisions. In contrast, service features did not show a significant effect on usage decisions. These findings indicate that for Generation Z, feature completeness or application innovation is considered a basic attribute that does not directly influence their decisions. This may be due to Generation Z's focus on a more holistic user experience, such as easy navigation and a sense of security, rather than the completeness of service features themselves.

Application developers like DANA should enhance usability by focusing on intuitive designs and streamlined navigation to minimize the cognitive load on users. Security measures, such as transparent data protection policies and robust fraud prevention systems, should be highlighted in marketing and user education to build trust. Developers could also introduce semi-personalized features, catering to the specific needs of users in semi-urban areas like Garut, such as offline transaction options or low-data consumption modes. Collaboration with local stakeholders to improve digital literacy among Generation Z in semi-urban regions could further drive adoption. Future research is expected to explore the interaction between these variables and other factors, such as service personalization and user trust, to gain deeper insights into Generation Z's behavior in using e-wallets.

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