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Gen Z Rural Area Perspective on Use of E-Money Applications in Indonesia

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Abstract

This study investigates factors influencing e-money adoption among Generation Z in rural Indonesia, a demographic vital for financial inclusion. Employing a modified Unified Theory of Acceptance and Use of Technology (UTAUT) framework, data from 208 rural Gen Z respondents were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). Key findings reveal social influence and effort expectancy significantly drive e-money usage, while performance expectancy does not. These results highlight the need for tailored strategies by fintech providers to foster digital payment adoption, particularly by strengthening community engagement and enhancing user-friendliness. The study offers novel insights into consumer behavior in underserved areas, with implications for financial inclusion policies. Future research should expand sample size and geographical scope.

JEL Classification: D83, E42, G53, O33, R20.
Keywords: E-Money, Rural Area, Indonesia, FinTech, Gen Z.

Perspectiva de la Generación Z en Zonas Rurales sobre el Uso de Aplicaciones de Dinero Electrónico en Indonesia

Resumen

Este estudio investiga los factores que influyen en la adopción del dinero electrónico entre la Generación Z en las zonas rurales de Indonesia, una demografía vital para la inclusión financiera. Empleando un marco modificado de la Teoría Unificada de Aceptación y Uso de la Tecnología (UTAUT), se analizaron datos de 208 encuestados de la Generación Z rural utilizando el Modelado de Ecuaciones Estructurales por Mínimos Cuadrados Parciales (PLS-SEM). Los hallazgos clave revelan que la influencia social y la expectativa de esfuerzo impulsan significativamente el uso del dinero electrónico, mientras que la expectativa de rendimiento no lo hace. Estos resultados subrayan la necesidad de estrategias adaptadas por parte de los proveedores de tecnología financiera para fomentar la adopción de pagos digitales, particularmente fortaleciendo el compromiso comunitario y mejorando la facilidad de uso. El estudio ofrece nuevas perspectivas sobre el comportamiento del consumidor en áreas desatendidas, con implicaciones para las políticas de inclusión financiera. La investigación futura debería ampliar el tamaño de la muestra y el alcance geográfico.

Clasificación JEL: C12, E44, F51, G11, G14, P50
Palabras clave: Dinero Electrónico, zona rural, Indonesia, tecnología financiera, generación Z

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1. Introduction

Technological developments have brought significant transformations across various sectors, including finance, known as fintech or financial technology. Fintech offers convenience and efficiency in transactions, minimizing the need for physical presence, and enabling access anytime, anywhere, as long as internet facilities are available (Nagorny, 2020; Elsaid, 2023; Sweeting, 2022). The shift from traditional financial models to fintech has become imperative amidst the demands of global business competition.

In the Indonesian context, the transformation of business models due to technological developments, particularly in payment systems, has shifted from offline to online to enhance efficiency, convenience, and flexibility for consumers (Luna et al., 2019). Bank Indonesia and the Financial Services Authority (OJK) actively regulate digital transactions and e-money as digital payment instruments.

The focus of this research shifts from fintech providers to its users, specifically Generation Z. Generation Z (born between 1997 and 2010) are known as true digital natives who are highly familiar with technology from a young age (Dimock, 2019; Persada et al., 2019). Their involvement is crucial in driving the effectiveness of digital and financial technology services (Phuong et al., 2022). With rapid smartphone penetration and an increasing preference for digital banking, Generation Z has become a key driver of demand for efficient and secure financial solutions (Montiel et al., 2020; Windasari et al., 2022).

Although the potential of fintech in Indonesia is very promising, significant challenges still exist, especially in rural areas which often experience limited internet access and digital infrastructure (Salemink et al., 2017). This digital divide hinders the widespread adoption of fintech and prevents many potential users from taking advantage of its benefits (Anantadjaya et al., 2023). Understanding how Generation Z interacts with fintech in underserved regions is essential to identifying barriers and opportunities for expansion. Given that Indonesia will reach the peak of its demographic bonus period in 2030, Generation Z holds a key role in achieving financial inclusion and supporting the Sustainable Development Goals (SDGs) (Wisnumurti et al., 2018).

E-money has become the dominant payment method in Indonesia's digital landscape (Sitompul, 2022). Its potential to transform finance is enormous, driven by the rapid growth of internet penetration and smartphone adoption (Arifin, 2020). However, challenges such as limited infrastructure in rural areas, cybersecurity concerns, and a lack of financial literacy still need to be addressed (Salemink et al., 2017). Addressing these challenges is crucial to fully realizing the potential of e-money in fostering a cashless economy and improving financial access across Indonesia.

Given this urgency, this study aims to investigate the behavior of Generation Z in rural areas of Indonesia regarding the use of e-money, especially with limited technological facilities. This research uses the Unified Theory of Acceptance and Use of Technology (UTAUT) model, which has proven effective in explaining consumer behavior in the use of financial technology (Alduais & Al-Smadi, 2022; Yahaya & Ahmad, 2019). The UTAUT theory, which explains about 70% of consumer perspective variables on technology use, involves significant factors such as Performance Expectancy

(PE), Effort Expectancy (EE), Social Influence (SI), and Facilitating Conditions (FC) (Khechine et al., 2016; Venkatesh et al., 2003).

The results of this research are expected to serve as a strategic guide for business actors, e-money service providers, regulators, and related institutions in developing digital non-cash payment policies in Indonesia, especially for Generation Z in rural areas. The structure of this paper includes an explanation of phenomena related to digital payment research in Indonesia, a literature review on fintech, research methodology, analysis of findings, as well as conclusions and recommendations for stakeholders.

2. Literature Review

2.1. Financial Technology (FinTech)

Technological innovation has become a key catalyst for modern economic growth, in line with Solow's economic growth theory which emphasizes the role of technology as a primary driver. Digitalization has fundamentally transformed consumption and production patterns, creating new business opportunities while marginalizing those unable to adapt (Santoso et al., 2021). This shift, especially in the financial sector, has increased financial inclusion and reduced inequality.

The term "fintech" has become global with the advancement of innovation in the financial services sector. Although its definition varies (Chen et al., 2018; Cheng & Qu, 2020), fintech is generally understood as the application of technology to create innovative financial solutions (Financial Stability Board), or a revolutionary effort in the financial sector that yields better and more accessible services (Thakor, 2020). Leong and Sung (2018) define fintech as a broad innovation ecosystem that integrates various technologies to provide comprehensive financial solutions, covering four main pillars: payments, advisory services, financing, and compliance.

Fintech has dramatically transformed the global financial sector, spurring economic growth and financial inclusion (Lee & Shin, 2018; Hussain et al., 2019). With over 12,000 fintech startups globally, fintech has proven to reshape traditional financial services and boost the real economy (KPMG, 2019). Its impact includes improved corporate financing, investment efficiency, and technological innovation, particularly for MSMEs (Wonglimpiyarat, 2018; Hsu et al., 2014). Furthermore, fintech innovations reduce information asymmetry, enhance financial resource allocation, and stimulate consumption by lowering transaction costs and expanding access to consumer credit (Demertzis et al., 2018; Beck et al., 2018; Li et al., 2020).

In Indonesia, the fintech industry's growth has been rapid, making it a key player on the global stage with a digital economy value reaching US$40 billion in 2019 (Kharisma, 2020). Fintech lending is the fastest-growing segment, disbursing Rp455 trillion by September 2022 (OJK, 2022). Indonesia is also a global hub for the Islamic fintech startup ecosystem (Hudaefi, 2020), with dominance in the payment and lending sectors (Utami & Ekaputra, 2021).

2.2. Use of Digital Payments

Digital payments, including mobile payments, ATM debit, and e-money, have experienced rapid global growth and are often used interchangeably with electronic payments or cashless payments (Lok, 2015; Negm, 2023; Trianto et al., 2023; Rahman et al., 2022; Dieu et al., 2023; Kumar et al., 2023). The Covid-19 pandemic served as a major catalyst for digital payment adoption, driving a shift towards safer and more efficient payment methods.

Despite offering convenience, digital payments face resistance from some individuals due to behavioral intentions and innovation resistance (Sivathanu, 2019). Lack of experience, confidence, security concerns, and limited functionality hinder mobile payment adoption (Kaur et al., 2020). Additionally, characteristics such as anxiety, self-efficacy, fatigue, and a "wait-and-see" attitude contribute to consumer reluctance (Behera et al., 2023). The habit of using cash also influences resistance to digital payments (Cham et al., 2022). However, factors such as mindfulness, perceived ease of use, perceived usefulness, subjective norms, and attitude influence mobile payment adoption (Flavian et al., 2020). Social influence and government support are key drivers of digital payment adoption in Indonesia (Trianto et al., 2023).

Several studies have identified key factors influencing the adoption of electronic payments. Lok (2015) highlights the importance of cultural aspects. Negm (2023) found that performance expectations, facilitating conditions, effort expectancy, and social influence are determinants of Arab consumers' interest. Yusfiarto (2021) observed that religious commitment also affects the shift to mobile payments among Indonesian Muslim consumers. Other research by Al-Okaily et al. (2022) and Alkhwaldi and Al Eshoush (2022) emphasize the role of trust, social influence, and price value. Overall, these studies indicate that beyond technical factors, cultural, social, and psychological aspects play essential roles in promoting or inhibiting the adoption of electronic payments in different contexts.

2.3. E-money (Electronic Money)

E-money has emerged as a transformative force in the global payment landscape, enabling seamless transactions across various platforms thanks to technological advancements (Azhar, 2020; Arifin, 2020). Unlike traditional cash, e-money exists solely in electronic form, facilitating faster and more efficient payments. This digital revolution has significant implications not only for individuals but also for the economy.

The development of e-money has become a key focus in the business world, driven by the efforts of entrepreneurs and companies seeking to address market competition and add value for customers (Yun et al., 2020). Successful innovation in this area relies not only on creativity but also on strong partnerships with financial institutions and active user involvement (Ortiz et al., 2019). The innovation ecosystem for e-money is collaborative, involving multiple stakeholders.

In Indonesia, the payment landscape has experienced significant transformation with the rapid rise of e-money and e-wallet usage (Lestari et al., 2023). The COVID-19 pandemic accelerated this shift as people sought more hygienic and contactless payment methods (Janah, 2022). Factors such as ease of use, security, and additional features have made these services popular among consumers, while government support and integration with other services have further boosted adoption (Sukmawati, 2022). The dominance of e-money examples like DANA, GoPay, OVO, and ShopeePay reflects how digital payments are becoming an integral part of daily life (OJK, 2024).

The rise of e-money in Indonesia has had positive effects, such as promoting financial inclusion, increasing transaction efficiency, and driving digital economic growth (Gunawan, 2022). However, the competitive nature of the e-money sector, with numerous applications offering different features and targeting various market segments, poses challenges. Issues such as data security, the digital divide, and evolving regulations need to be addressed.

2.4. Generation Z in Rural Areas

Generation Z, born between 1995 and 2010, is known as the first generation of true digital natives who are highly familiar with technology, the internet, and social networks from a young age (Francis, 2018). They tend to be idealistic, confrontational, and less willing to accept diverse viewpoints. They consume as a means of expressing individual identity and are deeply concerned with ethical consumption. This generation has unique values and perspectives that shape how social interests are formed and expressed (Turner, 2015). Generation Z in Indonesia, while sharing similarities with their global peers, exhibits unique characteristics shaped by socio-cultural factors and significant life events (Hinduan et al., 2020). Despite their technological prowess, Generation Z values social interaction and seeks guidance from experts, especially during challenging times.

However, the significant digital divide between urban and rural areas remains a major obstacle for rural communities in accessing and utilizing technology optimally (Moseley, 2023). This gap includes limited infrastructure, affordability issues, and a lack of digital skills among rural residents (Salemink et al., 2017; Ritter, 2018). The digital divide can hinder rural development by limiting access to information, education, healthcare, and economic opportunities (Anisa, 2021; Suharti et al., 2020; Rufaidah et al., 2023). Therefore, it is important to bridge this gap through targeted policies and investments in rural ICT infrastructure and capacity building.

2.5. Technology Acceptance Models: UTAUT

Research on technology acceptance and use often employs the Unified Theory of Acceptance and Use of Technology (UTAUT) model. UTAUT, developed by Venkatesh et al. (2003), integrates eight major theories in technology acceptance research into four main constructs: Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), and Facilitating Conditions (FC). This model has proven highly effective in explaining behavioral intention and technology use in various contexts (Abushanab & Pearson, 2007; Khechine et al., 2016).

In this study, we adopt a modified Unified Theory of Acceptance and Use of Technology (UTAUT) model to examine the perspectives of Generation Z in rural Indonesia regarding the use of e-money applications. The modifications to this model focus on the core UTAUT constructs (PE, EE, SI) and also consider the moderating effects of demographics such as age, gender, and experience. The justification for this focus is the direct relevance of PE, EE, and SI in the context of digital payment adoption, as well as the importance of demographic factors within the specific Generation Z population being studied (Venkatesh et al., 2003). Thus, the model used is more focused on adapting to the specific context rather than covering all UTAUT constructions.

2.6. Past Research and Hypothesis Formulation

Abushanab and Pearson (2007) found that the UTAUT framework is highly effective for examining internet banking adoption. Farzin et al. (2021) tested UTAUT2, a theoretical development of UTAUT, in the use of M-banking in Iran and found that performance expectations are a predictor that influences a person's decision to use M-banking. Rahim et al. (2023) also found that performance expectancy influences an individual's perception of fintech usage in Malaysia. Research shows that when performance expectancy is high, customers exhibit high behavioral intention (Chiao-Chen, 2013). Therefore, the first hypothesis is:

H1: Performance expectancy is positively related to using electronic money (e-money) payment systems.

Effort expectancy is the level of ease in using innovation and technology (Rahim et al., 2023), or the level of an individual's comfort with a specific technology (Yu, 2012). Madan et al. (2016), Hossain (2019), and Farzin et al. (2021) confirmed that ease of use is a key factor in encouraging people's interest in using e-money. The easier and simpler a financial technology is, the more likely someone will use it (Dehbini, et al, 2015; Widayat, et al, 2020). This indicates that aspects such as device compatibility, internet accessibility, and system security are determining factors in encouraging the use of e-money. Therefore, the second hypothesis is:

H2: Effort expectancy is positively related to using electronic money (e-money) payment systems.

Social influence (SI), according to Venkatesh et al. (2012) and Yu (2012), measures the extent to which an individual feels that those closest to them support the use of a particular technology. This concept is closely related to self-image and social norms, whereby individuals tend to adopt behaviors endorsed by their social group (Farah et al., 2018; Farzin & Fattahi, 2018). This influence can occur through compliance, internalization, or identification (Venkatesh et al., 2003). Previous research indicates that social influence significantly impacts individuals' perceptions of using fintech and Islamic fintech (Farzin et al., 2021; Soomro, 2019; Xie et al., 2021; Widayat, et al, 2020). Therefore, the third hypothesis is:

H3: Social influence is positively related to using electronic money (e-money) payment systems.

Research shows that technology use is often influenced by factors such as gender, age, education, income, and experience. Al-Dmour et al. (2020) emphasized that demographics, especially high income, youth, and strong educational background, play an important role in shaping behavior in using internet banking. Other research also highlights the role of gender in internet banking use (Alalwan et al., 2017; Hossain et al., 2018). Sobti (2019) found that gender, age, and education had a positive influence, although small, on mobile payment behavior in India. Nevertheless, these findings can vary between countries (Bommer et al., 2022). In the context of fintech, personal and demographic factors, such as gender, age, and experience, serve as moderating variables that influence the relationship between key motivators and technology use, highlighting the complex nature of acceptance shaped by individual characteristics (Venkatesh et al., 2003). Therefore, further additional hypotheses are formulated as follows:

H4a: Personal characteristics (gender, age, and experience) moderate the relationship between performance expectancy and the use of electronic money (e-money) payment systems.

H4b: Personal characteristics (gender, age, and experience) moderate the relationship between effort expectancy and the use of electronic money (e-money) payment systems.

H4c: Personal characteristics (gender, age, and experience) moderate the relationship between social influence and the use of electronic money (e-money) payment systems.

3. Methodology

3.1. Research Design

This study aims to identify the factors influencing consumers in rural areas of Indonesia in their use of electronic payments (e-money) in 2024. Using a modified Unified Theory of Acceptance and Use of Technology (UTAUT) model as a theoretical framework, data was collected through an online

questionnaire distributed to e-money users across various rural regions in Indonesia. Responses were gathered using a 5-point Likert scale questionnaire designed based on the UTAUT constructs, as shown in (Table 1).

3.2. Model Development

Following in the footsteps of Farzin et al. (2021) and Rahim et al. (2023), this research leverages the modified UTAUT model as its primary theoretical lens. This decision is grounded in the model's proven ability to explain technology adoption (Thomas et al., 2011). The core UTAUT constructs (performance expectancy, effort expectancy, and social influence) align closely with the objectives of this study. The model's robust explanatory power, as demonstrated by Chhonker et al. (2017) and Rahim et al. (2023), further reinforces its suitability for this research. The model constructed in this research is as follows:

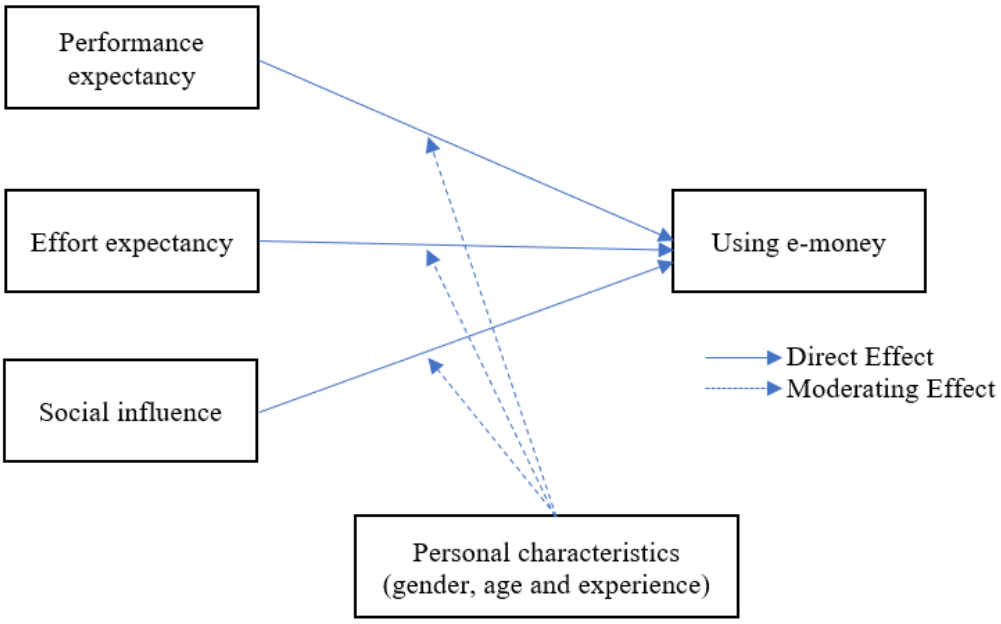

Figure 1. Proposed Empirical Model

3.3. Data Collection

This study examines the use of e-money financial technology by Generation Z in rural areas of Indonesia. Data was collected through an online survey distributed via social media platforms (Google Forms) and local community networks in rural areas. The survey was conducted from May to August 2024. Respondents were specifically targeted as Generation Z individuals (born 1997-2010) residing in rural areas across eight provinces in Indonesia (North Sumatra, Central Java, Aceh, Papua, West Sumatra, Banten, South Sulawesi, and East Nusa Tenggara). To ensure respondents were e-money users, screener questions were included at the beginning of the questionnaire.

After the screening process, 208 respondents met the criteria and were used for analysis through Structural Equation Modeling (SEM). SEM was chosen for its ability to test causal relationships between latent variables. Although Masrizal et al. (2022) note that there is no strict rule for minimum sample size in SEM, the sample size in this study is considered adequate based on recommendations by Hair et al. (2006), who suggest a minimum of 100-200 samples. It is important to acknowledge that the sampling strategy through online surveys potentially introduces selection

bias. Participating respondents are likely to have higher digital literacy or better internet access compared to the general rural Generation Z population. This limitation may affect the generalizability of the findings to the entire Generation Z population in rural Indonesia, which may have varying levels of digital literacy.

Table 1. Question Statements and Construct Measurements

Variables	Code	Question Statements
Performance expectancy (PE)		
	PE1	Using e-money will increase my effectiveness in completing payments.
	PE2	E-money can improve the speed of my performance in transactions.
	PE3	The use of e-money can save time in the transaction process.
	PE4	The use of e-money is beneficial to my life every day.
	PE5	I feel that transacting using e-money is more practical.
Effort expectancy (EE)		
	EE1	How to use e-money is easy to learn.
	EE2	E-money helps make it easier for me to make transactions.
	EE3	I find it easier to make transactions using e-money than cash.
	EE4	I quickly adapted to using e-money because the system is very easy.
	EE5	The features offered by e-money are very easy to understand.
	EE6	Overall in using e-money there is nothing complicated.
Social influence (SI)		
	SI1	I feel that I have kept up with the times of using e-money.
	SI2	Most of the Gen Z use e-money.
	SI3	I feel that e-money is more practical in this day and age.
	SI4	I recommend using e-money to my friend.
Using e-money (UE)		
	UE1	I feel that using e-money saves more time on a daily basis.
	UE2	I feel that I can make transactions faster if I use e-money.
	UE3	I feel that using e-money is more effective in my daily life.
	UE4	I find it very helpful with e-money.
	UE5	As an e-money user, I feel very proud to be able to use e-money.
	UE6	I use e-money because of my own desire.
	UE7	I feel very satisfied using the features provided by e-money.

Note Table 1: Responses were collected using a 5-point Likert scale, where 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree.

3.4. Method of Analysis

This research employs Partial Least Squares-Structural Equation Modeling (PLS-SEM), a statistical method for analyzing complex interactions between observed and latent variables, enabling researchers to examine both direct and indirect effects within a conceptual framework. This method is highly regarded for addressing social science issues, particularly its suitability for both large and small sample sizes (Hamdollah & Baghaei, 2016). Additionally, PLS-SEM is flexible and does not require stringent assumptions about data normality (Darmansyah et al., 2019).

PLS-SEM analysis involves two main stages: confirmatory factor analysis (CFA) and structural equation modeling. In the CFA stage, several key indicators are used to assess the model's validity, including factor loadings, average variance extracted (AVE), and Cronbach's alpha. To ensure convergent validity, factor loadings and AVE should exceed 0.5 (Ryu, 2018; Darmansyah et al., 2019), while Cronbach's alpha should be greater than 0.7 (Bagozzi & Yi, 1988; Jamshidi & Kazemi, 2019).

The structural model analysis examines the relationships between exogenous and endogenous variables.

4. Results and Discussion

4.1. Respondent Profile

The total number of respondents in this study was 208 people, the majority of whom were female, with 138 females (66.35%) and the remaining 70 males (33.65%). All respondents belonged to Generation Z. The largest age group was 20-21 years old, comprising 90 people, or about 43.27%. This was followed by 22-23 years old with 56 respondents, ≤19 years old with 27 respondents, 24-25 years old with 24 respondents, and the final group, aged ≥26 years, totaling 11 respondents or 5.29%. The majority of respondents (56.25%) had completed Senior High School, followed by Religious High School (25.00%) and Vocational High School (18.75%).

Data analysis revealed two main segments of e-money users: new users who began using it within the last year (43.75%) and users with two years of experience (34.13%), while users with more than three years of experience represented a relatively small segment. In this study, respondents from East Nusa Tenggara formed the largest group, accounting for 29.33%, followed by North Sumatra (25.96%) and South Sulawesi (16.35%). Central Java ranked fourth with a percentage of 13.94%. In contrast, provinces like Aceh, Papua, West Sumatra, and Banten had relatively fewer respondents, with Banten contributing only 0.48% of the total respondents.

Based on the survey conducted with 208 respondents, DANA was the most widely used e-money service, with a usage rate of 63.94%. ShopeePay ranked second with a usage percentage of 17.31%, followed by BRImo at 14.90%. Usage of OVO, GoPay, and BCA (Flazz) was relatively low, each accounting for only 1.92%, 0.96%, and 0.96%, respectively. This data indicates that DANA holds significant dominance in e-money user preference among respondents.

Table 2. Respondent Profile

Demographic respondent	N	%
Gender		
· Male	70	33,65
· Female	138	66,35
Age (years)		
· ≤19 years old	27	12,98
· 20 – 21 years old	90	43,27
· 22 – 23 years old	56	26,92
· 24 – 25 years old	24	11,54
· ≥26 years old	11	05,29
Experience using e- money		
· ≤1 years	91	43,75
· 2 years	71	34,13
· 3 years	9	04,33
· 4 years	28	13,46
· ≥5 years	9	04,33
Education		
· Senior High school	117	56,25
· Religious High School	52	25,00
· Vocational High school	39	18,75
Rural areas		

· Nusa Tenggara Timur	61	29,33
· Sumatera Utara	54	25,96
· Jawa Tengah	29	13,94
· Sulawesi Selatan	34	16,35
· Aceh	13	06,25
· Papua	7	03,37
· Sumatera Barat	9	04,33
· Banten	1	00,48
E-money services used		
· DANA	133	63,94
· Shopee Pay	36	17,31
· BRIMO	31	14,90
· OVO	4	01,92
· Gopay	2	00,96
· BCA (Flazz)	2	00,96

Source: Authors Finding, 2024 (Respondent profiles based on survey data)

The significant gender imbalance in this sample (66.35% female) should be noted as a methodological limitation. This difference likely arises from the online data collection method via social media, where the demographics of social media users in rural areas may show a higher tendency for female participation. Although this study does not explicitly test for differences in e-money adoption behavior based on gender, the dominant proportion of female respondents may still limit the generalizability of the findings. Some previous studies (e.g., Sobti, 2019) suggest that gender can have an influence, albeit small, on mobile payment adoption. Therefore, while these findings provide valuable insights into Generation Z in rural areas, the interpretation of results needs to consider this unbalanced gender representation. Future studies could explore in more depth the factors that might explain this imbalance and its impact on fintech adoption.

4.2 SEM-PLS Evaluation

4.2.1. Measurement Model Evaluation

SmartPLS 3.0 software served as the primary tool for data analysis in this study. The measurement model's purpose is to confirm the accuracy with which constructs are represented, while the structural model evaluates how effectively the model explains relationships. Key aspects of measurement model assessment include factor loadings, average variance extracted (AVE), and measures of reliability such as Cronbach's alpha and Composite Reliability (CR). For convergent validity, recommended values for factor loadings and AVE are above 0.5 (Ryu, 2018; Darmansyah et al., 2019). Composite Reliability (CR) and Cronbach's alpha values above 0.7 further support convergent validity (Bagozzi & Yi, 1988; Jamshidi & Kazemi, 2019).

Table 3. Measurement Model Evaluation

Construct	Loading	AVE	Cronbach's Alpha	CR
Performance expectancy		0,689	0,887	0,917
PE1	0,845			
PE2	0,860			
PE3	0,783			
PE4	0,801			
PE5	0,858			

Effort expectancy		0,771	0,940	0,953
EE1	0,902			
EE2	0,881			
EE3	0,802			
EE4	0,891			
EE5	0,903			
EE6	0,887			
Social influence		0,705	0,860	0,905
SI1	0,815			
SI2	0,760			
SI3	0,920			
SI4	0,856			
Using e-money		0,698	0,928	0,942
UE1	0,809			
UE2	0,858			
UE3	0,814			
UE4	0,871			
UE5	0,846			
UE6	0,774			
UE7	0,874			

Source: Authors Finding, 2024 (All constructs demonstrated factor loadings and AVE values above 0.50, with Cronbach's alpha and Composite Reliability exceeding 0.70, indicating sufficient convergent validity and strong internal consistency in the measurement model (Campos et al., 2012)).

4.2.2. Structural Model Evaluation

The findings of this research indicate that performance expectancy does not significantly impact Generation Z's intention to use e-money in rural regions of Indonesia, as shown by a path coefficient (β) of 0.082 and a p-value of 0.322, which is above the threshold of 0.05. Consequently, the initial hypothesis (H1) is rejected. In contrast, effort expectancy emerges as a crucial factor motivating Generation Z in rural Indonesia to adopt e-money, with a path coefficient (β) of 0.369 and a p-value of 0.000 ($p < 0.05$), leading to the acceptance of H2. Social influence also plays a critical role in shaping Generation Z's interest in e-money as a non-cash payment method, with a path coefficient (β) of 0.549 and a p-value of 0.000 ($p < 0.05$), thereby supporting H3. On the other hand, personal characteristics as a moderating factor do not show a significant effect on e-money use among Generation Z in rural Indonesian settings, resulting in the rejection of hypotheses H4a, H4b, and H4c.

Table 4. Structural Model

	Path coefficients		
Relationships	**Estimate**	**t-Statistic**	**p-Value***
Direct effect			
Performance expectancy (PE) on using e-money	0,082	0,926	0,355
Effort expectancy (EE) on using e-money	0,369	3,769	0,000
Social influence (SI) on using e-money	0,549	6,710	0,000
Moderating effect			
PE*personal characteristic on using e-money	0,042	0,439	0,661
EE*personal characteristic on using e-money	0,142	1,444	0,149
SI*personal characteristic on using e-money	-0,120	1,258	0,209

CR (Critical Ratio)* = Significant at 0,05 level (Results of the PLS-SEM structural model evaluation. The β value indicates the strength and direction of the relationship, while the p-value indicates statistical significance. Coefficients are significant at $p<0.05$).

4.3. Discussion

This study shows that social influence is a significant factor in driving individuals' interest in using the e-money electronic payment system. In line with Mbrokoh (2016), an individual's tendency to follow the recommendations of their social environment greatly affects their decision to adopt new technology, such as e-money (Widayat, et al, 2020). Therefore, support from key figures in the community for e-money use can act as a catalyst in increasing the adoption of this technology. These findings are consistent with previous research by Gupta et al. (2019), Tarhini et al. (2016), and Zhou et al. (2010), which indicate that consumers highly value the support and perspective of their reference group in fostering trust in mobile payment services. Recommendations from influential individuals can shape positive perceptions of this technology by creating a good service image.

Furthermore, this study confirms previous findings (Madan et al., 2016; Hossain, 2019; Farzin et al., 2021; Widayat, et al, 2020) that effort expectancy or ease of use is a key factor in encouraging people's interest in using e-money. The easier and simpler a financial technology is, the more likely someone will use it. This suggests that aspects such as device compatibility, internet accessibility, and system security are determining factors in encouraging the use of e-money. These findings underscore the importance of resource availability, such as device access, skills, and technical support, in encouraging e-money use, especially in rural areas. In accordance with research by Joshua and Koshy (2011), easy access to technology is a key factor in increasing the use of mobile payment services (Putra, et al, 2020; Sukma, 2022) . Additionally, Patil et al. (2020) emphasizes the importance of user training and support to facilitate e-money adoption.

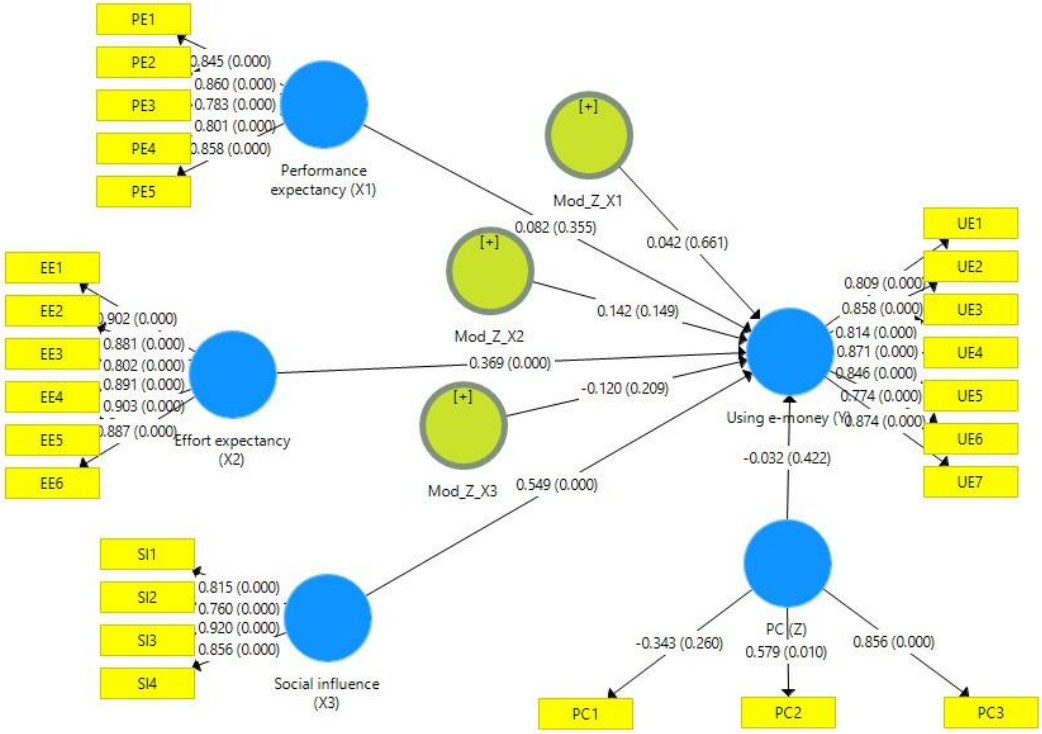

Figure 2. Structural Equation Modeling (SEM) Output*

*Structural model diagram showing path coefficients between constructs. Arrows indicate the direction of the relationship, and values above the arrows are the path coefficients (beta).

Another interesting finding is that performance expectancy does not significantly influence the intention to use e-money among rural Generation Z. This might suggest that even though the functional benefits of e-money are known, ease of use and social support are more dominant in driving adoption in rural environments, which may have varying digital literacy or a lack of robust supporting infrastructure compared to urban areas. In rural areas, community recommendations and the ease of interacting with new technologies could be more influential than merely the perception of how effectively the technology will improve their task performance.

4.4. Theoretical and Practical Implications

This study confirms that the UTAUT theory and its extensions, particularly the constructs of performance expectancy, effort expectancy, and social influence, are highly suitable for investigating customer interest in using e-money payment systems among Generation Z in rural areas of Indonesia. While personal characteristics, as an extension of the UTAUT theory, theoretically show no significant impact on e-money application usage, the core UTAUT variables play a significant role in predicting e-money adoption. This suggests that, in certain contexts, the core UTAUT framework is more appropriate, especially when personal characteristics are not primary driving factors. These findings indicate that the UTAUT framework used in this study has the potential to encourage wider adoption of e-money transactions among rural communities in Indonesia.

Practically, this research offers insights for financial technology service managers and digital payment platforms into how consumers decide to use e-money payment systems. Service providers should highlight the rational benefits of e-money, emphasizing its advantages for efficient transactions. Entrepreneurs, digital service providers, and stakeholders can develop marketing approaches that emphasize the convenience of cashless transactions through e-money. To effectively shape public perception, e-money providers should utilize influencers, as Indonesian society, including Generation Z, is often receptive to their endorsements. Partnerships with influencers are crucial for e-money providers to raise awareness of cashless payment options, thereby boosting the likelihood of adoption, particularly among Generation Z in rural areas of Indonesia. Providers should also focus on improving the ease of use of the application interface, ensuring intuitive navigation and simple transaction processes, and providing responsive customer support, especially in local languages or with easily accessible call centers.

5. Conclusions and Recommendations

5.1. Conclusion

This study aimed to assess the factors influencing Generation Z consumers' interest in using e-money payment services in rural Indonesia. By applying a Modified UTAUT framework, this research provides valuable insights in the field of financial technology. Key findings identified that social influence and effort expectancy significantly drive e-money usage among rural Generation Z. This indicates that support from the social environment and the ease of using the application are primary drivers, reflecting the rural community context where peer recommendations and seamless user experience are highly valued. Conversely, performance expectancy did not show a significant

impact, which might indicate that while e-money is considered functional, convenience and social acceptance are more dominant in initial adoption decisions in this environment.

The theoretical contribution of this research affirms the relevance of the UTAUT model in the context of fintech adoption in rural areas, expanding our understanding of how this theory operates within specific and underserved demographics. These results align with previous studies emphasizing the important role of social influence and ease of use in technology adoption in developing countries (e.g., Madan et al., 2016; Farzin et al., 2021). However, the rejection of performance expectancy as a significant predictor offers a new nuance compared to some studies in urban or developed countries, underscoring the importance of context in technology adoption research. The implications for financial inclusion and public policy are clear: to increase e-money adoption in rural areas, policies should focus on awareness campaigns that leverage social influence (e.g., through community leaders or local influencers) and investment in infrastructure and training to ensure ease of access and use.

5.2. Recommendations

Based on the study's findings, several recommendations can help stakeholders, startups, and businesses promote e-money adoption among Generation Z in rural Indonesia. First, strengthen social influence by collaborating with local youth groups, community leaders, and influencers to build trust and encourage usage through social endorsement. Second, improve ease of use by designing intuitive, user-friendly apps with simple processes and clear tutorials, supported by accessible technical assistance in local languages. Third, enhance digital literacy and security awareness through targeted educational programs in collaboration with schools, universities, and local governments. Lastly, supportive public policies are needed to expand digital infrastructure, offer incentives for fintech investment in rural areas, and promote cashless transactions in public services.

5.3. Limitations and Future Research

This research provides valuable insights into the use of e-money payment systems among Generation Z in rural areas of Indonesia, focusing on consumer perspectives. However, there are several limitations that need to be acknowledged. First, the study's sample is confined to five major islands: Sumatra, Java, Sulawesi, East Nusa Tenggara, and Papua, covering eight provinces. This geographical restriction means the findings may not fully represent the diverse experiences of all rural Generation Z consumers in Indonesia, given the significant cultural and economic variations across the country. Second, the relatively small sample size (208 respondents) compared to the total rural population may affect the reliability and generalizability of the results.

To improve future research, several recommendations are proposed. First, studies should involve a larger sample size and broaden their geographical scope to include more provinces and a wider range of rural areas. Second, researchers are encouraged to explore alternative or additional theoretical frameworks, such as the extended Technology Acceptance Model (TAM), or integrate constructs from other consumer behavior theories, like trust, perceived risk, and personal innovativeness, to gain deeper insight into the factors influencing e-money adoption. Third, employing mixed methods that combine both qualitative and quantitative approaches can offer a more comprehensive understanding of user experiences and the contextual factors at play in rural

settings. Lastly, conducting cross-demographic comparisons, such as between Generation Z and other generations in rural areas, or between rural and urban Generation Z, can help identify significant behavioral differences in e-money adoption.

Disclosure Statement

The authors reported no potential conflicts of interest.

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