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Research Paper

What Influences User Preferences in Digital Payment Systems? (A Comparative Analysis of E-Wallet in Indonesia)

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Abstract

This research explores the growing internet usage and rapid advancements in information and communication technology. Indonesia has witnessed increased adoption of digital financial technology, particularly in the form of fintech and digital payment systems. It is crucial to differentiate the characteristics and advantages among Indonesia's top three e-wallets: GoPay, OVO, and DANA. This study employs a comparative approach to analyze the relationship between user preferences and factors within GoPay, OVO, and DANA e-Wallets in the context of digital payment systems. Using a quantitative research approach and statistical verification. Data analysis employs SEM with the PLS method, involving 150 respondents whose results are compared across the platforms. The study finds that electronic service quality significantly impacts consumer loyalty and satisfaction across all three platforms. In GoPay and OVO, it notably influences satisfaction, but less so in DANA. Customer satisfaction mediate loyalty in GoPay and OVO but not in DANA. Responsiveness is a key component of e-wallet service excellence. Loyalty is influenced by referrals (GoPay and OVO), regular use (DANA), and pricing (DANA), whereas customer satisfaction (GoPay), pricing (DANA), and convenience (OVO) determine contentment. Limiting the study to three variables and three e-wallets may restrict the comprehensiveness of factors affecting consumer satisfaction and loyalty, potentially limiting the generalizability of findings to other digital payment platforms or market contexts. The novelty lies in the direct comparison of investigative outcomes among these three subjects within the context of digital payment systems, selecting high-value study indicators and advancing the prior research.

Keywords *E-Satisfaction, E-Service Quality, E-Loyalty, Digital Payment Systems*

INTRODUCTION

The advancement of information and communication technology in the modern era has brought significant changes in various aspects of life, including the financial sector (Khairina, 2022). This technology has enabled people to engage in digital transactions and payments more easily and efficiently. In recent years, the phenomenon of digital payments has been increasingly integrated into Indonesian society. With the presence of digital payment platforms such as e-wallets, individuals can quickly and securely conduct transactions, shop online, and pay bills using only their smartphones (Suhardi et al., 2023).

The popularity of e-wallets or digital wallets has been on the rise among the Indonesian population. E-wallets not only facilitate cashless transactions but also aid in financial management and provide access to a broader range of financial services. This aligns with the rapid growth of the fintech industry in Indonesia, allowing individuals who were previously underserved by traditional financial services to access these services digitally.

Additionally, as consumers look for safer and contactless payment options, the COVID-19 pandemic has expedited the uptake of digital payments. This has significantly increased the use of electronic wallets and other digital payment systems. Along with the increased usage of financial technology, public expectations for quick and effective financial services have further pushed this trend. The results of financial inclusion and literacy surveys in Indonesia also show a rise in e-

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wallet usage. These polls reveal that Indonesians' levels of financial inclusion and literacy has greatly increased in recent years. This shows that people are getting better at using electronic wallets and other types of digital financial services.

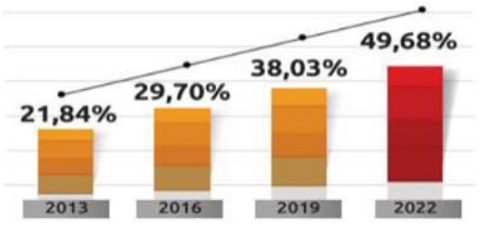

Figure 1. Financial Literacy Survey Results Year 2022

Source: Results of the SLNIK in Indonesia

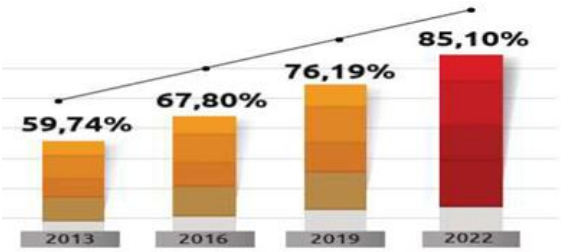

Figure 2. Financial Inclusion Survey Results Year 2022

Source: Results of the SLNIK in Indonesia

New difficulties have, however, arisen because of the rapid development of the E-wallet industry. The growing competition among e-wallet service providers is one of the main obstacles. The industry is oversaturated with platforms that offer essentially the same benefits and capabilities, making it difficult for customers to decide on and stick with a certain platform. Therefore, the goal of this study is to learn more about the elements that give e-wallet providers such as GoPay, OVO, and DANA a competitive edge. It also determines whether some aspects of the three platforms' influence on customer satisfaction, loyalty, and quality of service are similar or different.

In this context, the goal of this study is to learn more about the phenomena of digital payments made through e-wallets in Indonesia. This study intends to shed light on the variables affecting E-wallets' comparative advantage and how their use affects each platform's E-service quality, E-satisfaction, and E-loyalty. This study is important because it will shed more light on Indonesia's digital payment patterns, their effects on financial services, and how the public interacts with financial technology.

This study is interesting in that it simultaneously examines three topics: the e-wallets GoPay, OVO, and DANA, which were chosen based on their popularity in Indonesian top-of-mind polls in 2022. This thorough investigation attempts to pinpoint the similarities and contrasts in elements relating to the caliber, contentment, and loyalty of these three services' electronic offerings as well as their comparative benefits. Additionally, by emphasizing the formulation and significance testing of the four previously defined dimensions of system availability, fulfillment, responsiveness, and compensation in relation to e-service quality, this research proposes a new concept (Çelik, 2021).

This research fills the gap in previous studies. Studies such as those conducted by Uzir et al. (2020) only addressed the E-Satisfaction variable. Meanwhile, Jing and In Seon (2013) discussed E-System Quality and E-Service Quality. Other studies, such as those by Yunus et al. (2021), San et al. (2020), Puriwat and Tripopsakul (2017), Candra and Juliani (2018), Çelik (2021), Noor (2022), and Zavareh et al. (2012), examined E-Service Quality and E-Satisfaction. Other studies, such as Sudirjo et al. (2023) and Zemblytė (2015) explored E-Service Quality. Whereas Magdalena (2018), Mohd Fudzi (2019), Tavakoli (2013), Mahadevan and Joshi (2022), Indriastuti et al. (2022), Pradnyadewi and Giantari (2022), Khraiwish et al. (2022), Sundaram et al. (2017), Al-Dweeri et al.

(2017), Nasution et al. (2019), Marliyah et al. (2021), and Juwaini et al. (2022) investigated E-Service Quality, E-Satisfaction, and E-Loyalty but focused on a single unit of analysis. In this study, the researcher will concurrently investigate three units, namely the e-wallet units of GoPay, OVO, and DANA.

The state of the art in this research is influenced by previous studies made by notable contributors, including Jing and In Seon (2013), Uzir et al. (2020), and various others that focused on individual aspects such as E-Satisfaction, E-System Quality, and E-Service Quality. The described problem statement to be addressed isas follows: How does electronic service quality influence satisfaction, the impact of satisfaction on loyalty, and whether satisfaction mediates the relationship between service quality and loyalty in e-wallets GoPay, OVO, and DANA, while also identifying the comparative advantages and differences among them.

LITERATURE REVIEW

Electronic service quality, which assesses how well services align with customer expectations, plays a crucial role in customer satisfaction (Lewis & Booms, 1983). Parasuraman et al. (1985) extends this concept by considering the disparity between actual service and customer expectations. This encompasses participatory, online, and co-created services (Zeithaml et al., 2002; De Ruyter et al., 2001). The strong link between service quality and customer satisfaction promotes enduring relationships (Tjiptono, 1996). Long-term relationships enable companies to understand customer needs, enhancing satisfaction by maximizing positive experiences and minimizing negative experiences (Alma, 2007). When service quality meets or exceeds expectations, customers are more likely to return (Tjiptono, 1996; Alma, 2007). Various studies, including Mulyono et al. (2007) and Yesenia and Siregar (2014), affirm that service quality positively influences consumer satisfaction (Murtiningsih & Wahyudi, 2021). System availability, fulfillment, responsiveness, and compensation are the four main facets of E-service Quality (Çelik, 2021).

E-satisfaction is pivotal in modern marketing, linking attitude change, repeat purchases, brand dependence, and the buying process (LaTour & Peat, 1979; Churchill & Surprenant, 1982; Yi, 1989). E-satisfaction, as per Anderson and Srinivasan (2003), involves exceeding customer expectations, creating satisfaction through positive experiences, and retaining customers. Indicators for measuring customer satisfaction with the shopping experience include pricing, product variety, information, responsiveness, and services (Radionova-Girsa & Lahiža, 2017). E-Satisfaction refers to customers' attitudes toward the use of electronic banking services, which are influenced by factors such as service quality dimensions and their satisfaction with specific aspects of the service (Lim et al., 2023).

E-loyalty is the intention of a customer to make additional purchases from a certain website or to return to that website (Hur et al., 2011). This is the result of a mutually beneficial relationship between consumers and e-commerce companies that drives repeat purchasing behavior (Anderson & Srinivassan, 2003). The benefits of having loyal customers include long-term sales growth, increased profitability, and positive recommendations from satisfied customers. There are four dimensions of consumer loyalty: regular repeat purchases, cross-buying of products and services, recommending to others, and displaying resistance to competitors (Mashuri, 2020).

Fintech began to grow in Indonesia in the early 2010s, thanks to the Internet and smartphones, supported by government initiatives, and accelerated during the COVID-19 pandemic. Fintech provides practical digital financial solutions, including payments, financing, investment, and insurance, through platforms such as Gcash, Banko, ML Wallet, PayMaya, Coins Ph, GrabPay, and Paypal (Parilla & Abadilla, 2023).

Fintech provides benefits such as convenient, cost-efficient, secure, and fast services.

However, there are drawbacks such as internet dependency, fraud risks, high costs, and limited access. Fintech in Indonesia is governed by a legal framework in the payment system. Its advantages include consumer convenience, cost efficiency for Fintech players, and contributions to the national economy. Fintech development in Indonesia continues to grow each year, playing a role in providing business markets, facilitating payments, supporting financial activities, and reducing payment system risks.

Fintech, especially the digital payment system, has helped address financial issues in Indonesia. The use of electronic wallets such as OVO, GoPay, DANA, LinkAja, and Shopeepay is becoming more popular, although there are still risks such as hacker attacks and concerns about data privacy.

Regarding the impact of important factors on e-satisfaction and e-loyalty in the context of digital payment services, four hypotheses are presented in this study. According to the first hypothesis (H1), E-service quality affects E-satisfaction. Several prior studies (Nasution et al., 2019; Marliyah et al., 2021; Indriastuti et al., 2022; Pradnyadewi & Giantari, 2022) that found that digital service quality positively affects customer satisfaction support this hypothesis. According to the second hypothesis (H2), E-satisfaction affects E-loyalty. Previous studies (Nasution et al., 2019; Marliyah et al., 2021; Indriastuti et al., 2022; Pradnyadewi and Giantari (2022)) show how customer satisfaction affects customer loyalty in the context of digital services support this claim. According to the third hypothesis (H3), e-loyalty is also influenced by e-service quality. This is based on prior research showing that customer loyalty is strongly impacted by service quality (Nasution et al., 2019; Marliyah et al., 2021; Indriastuti et al., 2022; Pradnyadewi & Giantari, 2022). According to the fourth hypothesis (H4), there may be a relationship between E-service quality and E-loyalty that can be mediated through E-satisfaction. Results from several studies (Al-Dweeri et al., 2017; Phromlert et al., 2019) support this idea, indicating that customer satisfaction can serve as a mediator in the relationship between service quality and customer loyalty.

The study's hypothesis model, which is based on earlier research, focuses on four important dimensions: System Availability, Fulfillment, Responsiveness, and Compensation, and explores how they relate to E-service Quality. It also examines how E-service quality, E-satisfaction, E-Loyalty, and the mediation role of E-satisfaction are related.

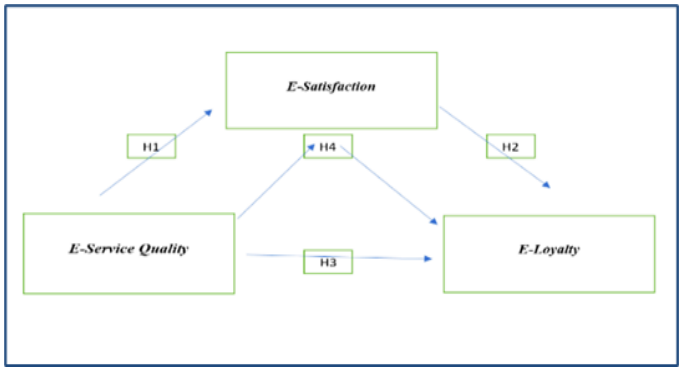

Figure 3. Conceptual Framework

RESEARCH METHOD

The top three Indonesian e-wallets, GoPay, OVO, and DANA, are investigated in this study using a quantitative approach and verifiable statistical analysis. Likert scale surveys were used to gather data, which included Strongly Disagree (1), Agree (2), Neutral (3), Disagree (4), and Strongly Disagree (5), which were used to measure the questionnaire items. The required sample size is 150 responders, calculated using Hair et al.'s method, with 30 questions multiplied by 5. The list of questions is the result of development and adoption from previous research, such as Anderson and

Srinivasan (2003) and Mashuri (2020). The sample is chosen using the Purposive Random Sampling method with the criteria that respondents are active users of the three e-wallets on a single smartphone. A total of 150 respondents provided answers to 450 questions related to the three e-wallets. 30 statements were presented to 150 respondents who are active users of three digital payment systems: OVO, GoPay, and DANA. Each respondent provided 3 answers in one statement for each e-wallet, resulting in 450 responses (150 respondents x 3 e-wallets).

This study examines the relationships among dependent, independent, and mediation variables using structural equation modeling (SEM) and partial least squares (PLS) for data analysis. The research aims to provide empirical evidence regarding hypotheses related to e-wallet advantages, electronic service quality, electronic customer satisfaction, and electronic loyalty, and to compare these aspects across three e-wallets.

FINDINGS AND DISCUSSION

To measure the variables of e-service quality, e-satisfaction, and e-loyalty in the digital payment systems GoPay, OVO, and DANA, this research uses data collected through questionnaires disseminated through Google Forms. 150 respondents make up the research sample, with an equal number of men and women. The data also reveal a range of respondents' professions, with the majority working in the private sector, followed by housewives, government officials, and teachers. The highest levels of education held by respondents also varied, with the majority having diplomas or bachelor's degrees. Master's degrees, primary through junior high school levels, and high school or similar levels are then followed by.

The respondents' ages range widely, with the greatest groups being between the ages of 26 and 35, followed by those between the ages of 36 and 45 and those between the ages of 17 and 25. This study aims to provide a rich and comprehensive perspective on the variables of e-service quality, e-satisfaction, and e-loyalty in the context of GoPay, OVO, and DANA e-wallet services by using a diverse sample that represents various aspects such as gender, occupation, education, and age.

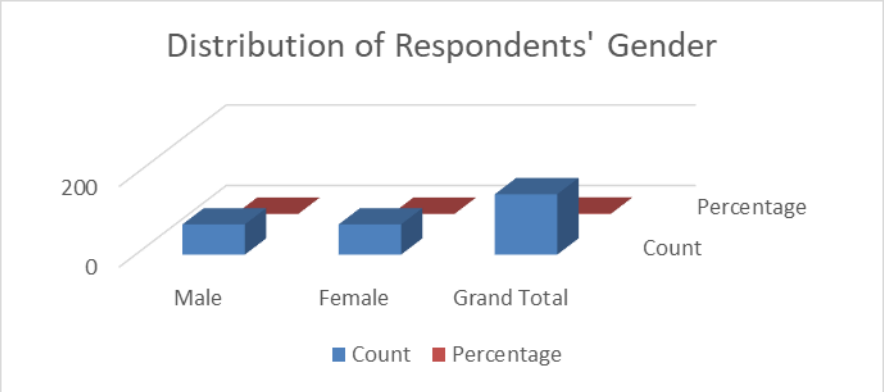

Figure 4. Distribution of Respondents' Gender

Source: Processed by the researcher

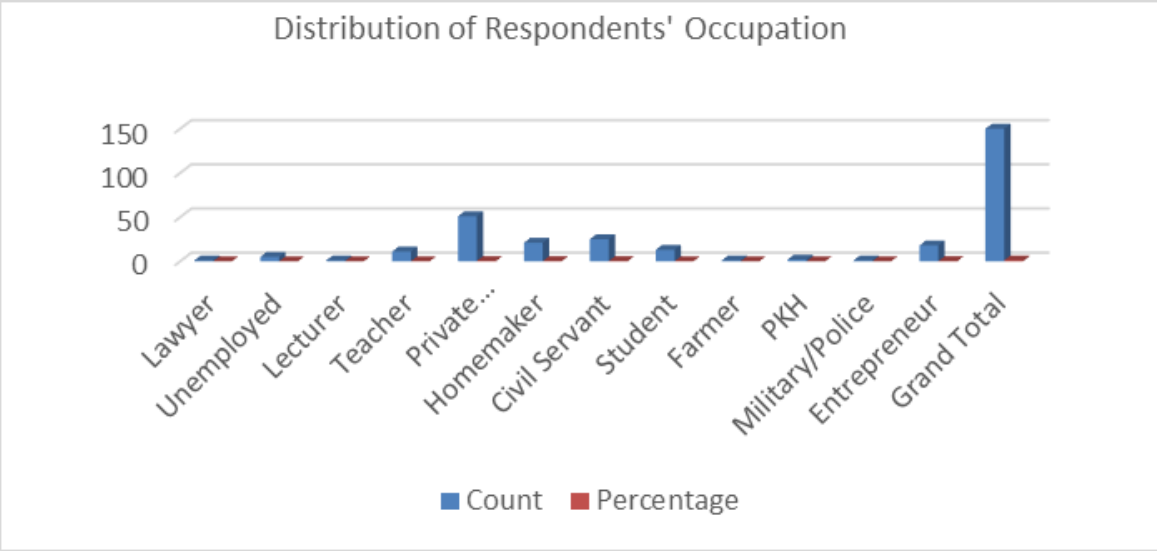

Figure 5. Distribution of respondents' occupations

Source: Processed by the researcher

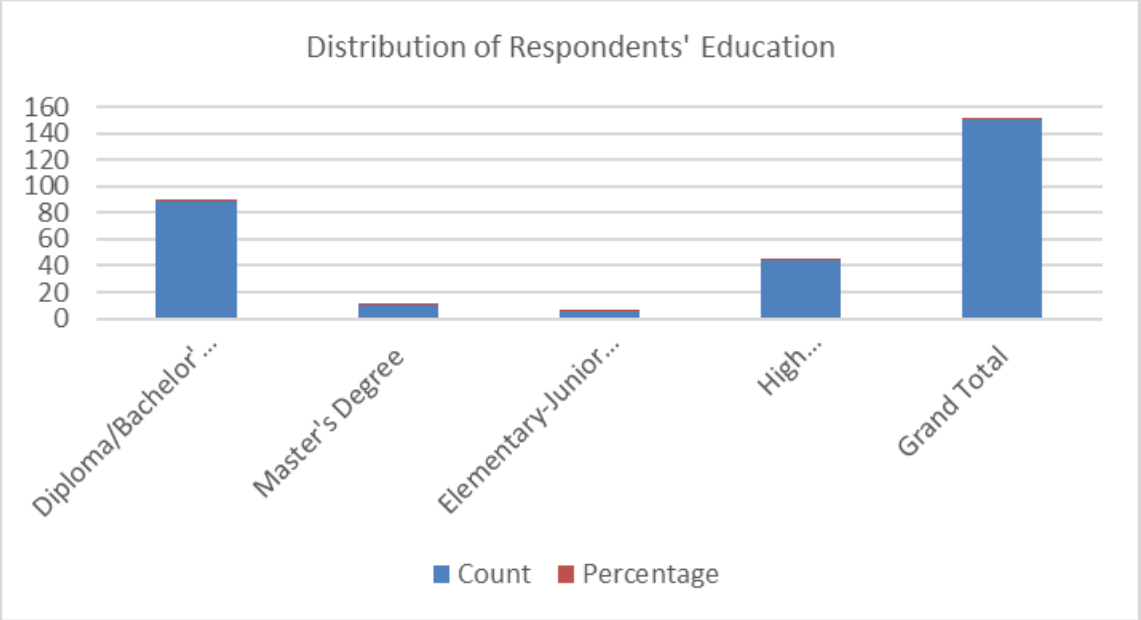

Figure 6. Distribution of respondents' education

Source: Processed by the researcher

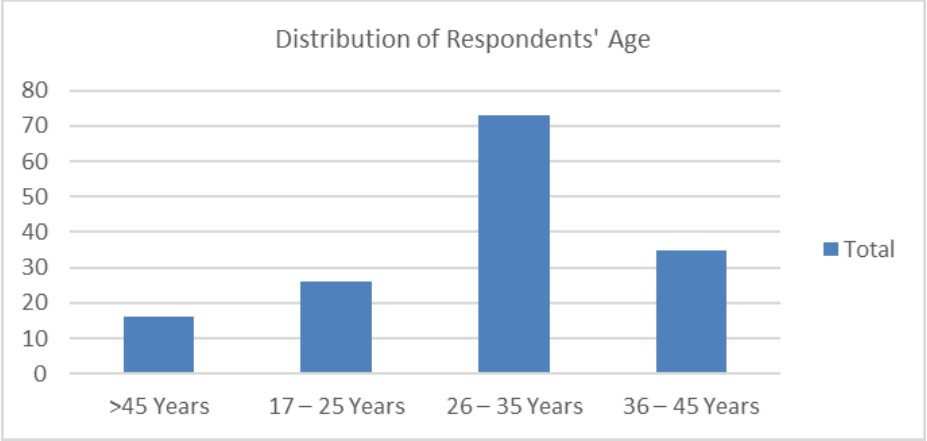

Figure 7. Distribution of Respondent Age

Source: Processed by the researcher

This statistically verifiable study aims to demonstrate the link between customer loyalty and electronic service quality in Indonesia's three most widely used digital payment systems, OVO, GoPay, and DANA. In addition, this study investigates the function of customer pleasure (pleasure) as a mediator between the caliber of an electronic service and client loyalty. Path analysis is the statistical methodology employed, and bootstrapping methods are used to test the significance and strength of the correlations between the variables. To ensure representativeness, the research sample comprised 150 participants from a range of professions, ages, educational levels, and genders. First, the validity test findings show that convergent validity is met because all indicators of the E-Service Quality, E-Satisfaction, and E-Loyalty variables have outer loading values larger than 0.5 (Truong & McColl, 2011; Hulland, 1999). Additionally, the reliability test fulfills established reliability standards, with values exceeding 0.7 and 0.6 for Cronbach's Alpha and Composite Reliability, respectively (Fitria, 2023).

Table 1. Outer Loading (GoPay, OVO and DANA)

		DANA		GoPay		OVO	
Variable	***Indicators***	***Outer Loading***	***Explanation***	***Outer Loading***	***Explanation***	***Outer Loading***	***Explanation***
E-service Quality	X1	0,966	*Significant and Valid***	0,982	*Significant and Valid***	0,982	*Significant and Valid***
	X2	0,991	*Significant and Valid***	0,991	*Significant and Valid***	0,991	*Significant and Valid***
	X3	0,965	*Significant and Valid***	0,977	*Significant and Valid***	0,977	*Significant and Valid***
	X4	0,968	*Significant and Valid***	0,964	*Significant and Valid***	0,964	*Significant and Valid***
	X5	0,956	*Significant and Valid***	0,968	*Significant and Valid***	0,968	*Significant and Valid***
	X6	0,979	*Significant and Valid***	0,990	*Significant and Valid***	0,990	*Significant and Valid***
	X7	0,982	*Significant and Valid***	0,972	*Significant and Valid***	0,972	*Significant and Valid***

	X8	0,980	*Significant and Valid****	0,987	*Significant and Valid****	0,987	*Significant and Valid****
	X9	0,959	*Significant and Valid****	0,963	*Significant and Valid****	0,963	*Significant and Valid****
	X10	0,969	*Significant and Valid****	0,976	*Significant and Valid****	0,976	*Significant and Valid****
	X11	0,972	*Significant and Valid****	0,967	*Significant and Valid****	0,967	*Significant and Valid****
	X12	0,968	*Significant and Valid****	0,962	*Significant and Valid****	0,962	*Significant and Valid****
E-satisfaction	Z1	1,000	*Significant and Valid****	1,000	*Significant and Valid****	1,000	*Significant and Valid****
	Z2	1,000	*Significant and Valid****	1,000	*Significant and Valid****	1,000	*Significant and Valid****
	Z3	1,000	*Significant and Valid****	1,000	*Significant and Valid****	1,000	*Significant and Valid****
	Z4	1,000	*Significant and Valid****	1,000	*Significant and Valid****	1,000	*Significant and Valid****
	Z5	1,000	*Significant and Valid****	1,000	*Significant and Valid****	1,000	*Significant and Valid****
	Z6	1,000	*Significant and Valid****	1,000	*Significant and Valid****	1,000	*Significant and Valid****
E-loyalty	Y1	0,958	*Significant and Valid****	0,974	*Significant and Valid****	0,974	*Significant and Valid****
	Y2	0,962	*Significant and Valid****	0,977	*Significant and Valid****	0,977	*Significant and Valid****
	Y3	0,956	*Significant and Valid****	0,972	*Significant and Valid****	0,972	*Significant and Valid****
	Y4	0,974	*Significant and Valid****	0,975	*Significant and Valid****	0,975	*Significant and Valid****
	Y5	0,975	*Significant and Valid****	0,976	*Significant and Valid****	0,976	*Significant and Valid****
	Y6	0,972	*Significant and Valid****	0,979	*Significant and Valid****	0,979	*Significant and Valid****
	Y7	0,973	*Significant and Valid****	0,975	*Significant and Valid****	0,975	*Significant and Valid****
	Y8	0,922	*Significant and Valid****	0,981	*Significant and Valid****	0,981	*Significant and Valid****
	Y9	0,932	*Significant and Valid****	0,923	*Significant and Valid****	0,923	*Significant and Valid****
	Y10	0,934	*Significant and Valid****	0,950	*Significant and Valid****	0,950	*Significant and Valid****
	Y11	0,642	*Significant and Valid****	0,720	*Significant and Valid****	0,720	*Significant and Valid****
	Y12	0,891	*Significant and Valid****	0,855	*Significant and Valid****	0,855	*Significant and Valid****

Source: Processed by the researcher

Table 2. Cronbach's alpha and composite reliability (GoPay, OVO and DANA)

	GoPay				DANA				OVO			
Variable	**Cronbach's Alpha**	**rho_A**	**Composite Reliability**	**Average variance extracted (AVE)**	**Cronbach's Alpha**	**rho_A**	**Composite Reliability**	**Average variance extracted (AVE)**	**Cronbach's Alpha**	**rho_A**	**Composite Reliability**	**Average variance extracted (AVE)**
E-loyalty (Y)	0,980	0,985	0,983	0,831	0,974	0,978	0,977	0,784	0,982	0,987	0,985	0,846
Recommending Others	0,978	0,978	0,985	0,957	0,952	0,953	0,969	0,914	0,983	0,983	0,989	0,967
Showing Immunity to Competitors	0,886	0,913	0,923	0,751	0,874	0,907	0,916	0,736	0,896	0,933	0,930	0,772
Cross-Product and Service Purchases	0,950	0,950	0,976	0,952	0,947	0,947	0,974	0,950	0,931	0,931	0,967	0,935
Regular Reuse	0,973	0,974	0,983	0,950	0,956	0,956	0,971	0,918	0,978	0,979	0,986	0,959
E-satisfaction (Z)	0,985	0,985	0,987	0,929	0,979	0,979	0,983	0,905	0,987	0,987	0,989	0,938
Customer Satisfaction with the Product Price	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Customer Satisfaction with Information.	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Customer Satisfaction with Service.	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Customer Satisfaction with Product Variety.	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Customer Satisfaction with Responses and Answers.	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Customer Satisfaction with Convenience.	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
E-service quality (X)	0,992	0,992	0,993	0,919	0,990	0,990	0,991	0,901	0,990	0,990	0,991	0,898
System Availability	0,983	0,983	0,989	0,967	0,973	0,973	0,982	0,948	0,967	0,967	0,978	0,938
Fulfillment	0,973	0,974	0,982	0,948	0,966	0,966	0,978	0,937	0,969	0,969	0,980	0,942
Responsiveness	0,982	0,983	0,987	0,950	0,973	0,973	0,982	0,948	0,974	0,974	0,981	0,927
Compensation	0,925	0,929	0,964	0,930	0,937	0,942	0,970	0,941	0,939	0,940	0,970	0,942

Source: Processed by the researcher

The independent variables (DANA, OVO, and GoPay) account for roughly 85.7%–88.4% of the variability in E-loyalty, according to the results of the R-squared test in the E-loyalty (Y) model. The R-squared values range from 0.857 to 0.884, and the adjusted R-squared values range from 0.856 to 0.883. The E-satisfaction (Z) model produced similar findings, with independent factors explaining between 89.1% and 92.2% of the variance in E-satisfaction, with R-squared values ranging from 0.891 to 0.922 and adjusted R-squared values from 0.890 to 0.921. The high values of R-squared and Adjusted R-squared show how well these models capture the link between the independent and dependent variables. In this context, R-squared values of 0.75, 0.50, and 0.25, respectively, denote strong, moderate, and weak model strengths (Sarstedt et al., 2016).

Table 3. R-square (GoPay, OVO dan DANA) Source: Processed by the researcher

Variable	DANA		OVO		GoPay	
	R-square	Adjusted R-square	R-square	Adjusted R-square	R-square	Adjusted R-square
E-loyalty (Y)	0,858	0,856	0,884	0,883	0,857	0,856
E-satisfaction (Z)	0,898	0,897	0,891	0,890	0,922	0,921

Hypothesis Testing

1. GoPay E-wallet

   The data analysis results for the GoPay e-wallet reveal four tested relationships:

   a. In the context of GoPay, the association between E-service quality and E-satisfaction has a parameter coefficient of 0.960 and a p-value of 0.000. This suggests a statistically significant association, demonstrating that an enhancement in the caliber of electronic services significantly increases electronic satisfaction while using GoPay. As a result, Hypothesis 1 is confirmed.

   b. The parameter coefficient and p-value for the association between E-satisfaction and E-loyalty through GoPay are 0.481 and 0.003, respectively. This also denotes a statistically significant association, suggesting that adopting GoPay increases electronic loyalty through a favorable impact on electronic satisfaction. As a result, Hypothesis 2 is confirmed.

   c. In the case of GoPay, the association between e-service quality and e-loyalty has a parameter coefficient of 0.454 and a p-value of 0.0048. These findings are statistically significant, suggesting that an improvement in the caliber of electronic services encourages electronic loyalty while using GoPay. Thus, hypothesis three is confirmed.

   d. The mediation model's parameter coefficient for the association between e-service quality, e-satisfaction, and e-loyalty is 0.462, with a p-value of 0.004. In addition, it shows statistical importance. regarding illuminating the connections between these variables in this context, the mediation model tying electronic service quality, electronic satisfaction, and electronic loyalty to GoPay usage yields noteworthy findings. Therefore, Hypothesis 4 is confirmed.

2. DANA E-wallet

   The data analysis results for the DANA e-wallet reveal four tested relationships:

   a. The parameter coefficient for the link between the caliber of an e-service and e-satisfaction is 0.947, and the p-value is 0.000. This suggests that there is a highly substantial statistical association between improved electronic service quality and higher levels of electronic satisfaction. Therefore, Hypothesis 1 is accepted.

b. A parameter coefficient of 0.254 and a p-value of 0.084 for the link between E-satisfaction and E-loyalty indicate that it is not statistically significant (the p-value is higher than the usually accepted significance level of 0.05). This suggests that in this study, electronic loyalty (E-loyalty) does not significantly affect electronic contentment (E-satisfaction). As a result, Hypothesis 2 is therefore disproved.
c. A parameter coefficient of 0.682 and a p-value of 0.000 indicate a highly significant link between E-service quality and E-loyalty. This shows that higher levels of electronic loyalty are greatly influenced by improvements in the quality of electronic services. As a result, Hypothesis 3 is therefore supported.
d. In the mediation model, there was no statistically significant association between e-service quality, e-satisfaction, and e-loyalty, with a parameter coefficient of 0.241 and a p-value of 0.087. The mediation model fails to describe the relationships between these variables in this situation with any real significance. As a result, Hypothesis 4 is disproved.

3. OVO E-wallet

The data analysis results for the OVO e-wallet reveal four tested relationships:

a. In the context of OVO, the parameter coefficient for the link between E-service quality and E-satisfaction is 0.944, and the p-value is 0.000. This suggests a statistically significant association, demonstrating that an improvement in the quality of electronic services significantly increases electronic satisfaction while using OVO. As a result, Hypothesis 1 is supported.
b. The parameter coefficient for the link between E-satisfaction and E-loyalty through OVO is 0.487, and the p-value is 0.000. This denotes a statistically significant association and suggests that employing OVO will boost electronic satisfaction, which will then promote electronic loyalty. Considering the recent study, Hypothesis 2 is therefore accepted.
c. In the setting of OVO, the parameter coefficient for the association between e-service quality and e-loyalty is 0.467, and the p-value is 0.000. These findings are statistically significant, suggesting that an improvement in the quality of electronic services encourages electronic loyalty when using OVO. In accordance with earlier studies, hypothesis three is therefore accepted.
d. The mediation model's parameter coefficient for the association between e-service quality, e-satisfaction, and e-loyalty is 0.460, with a p-value of 0.000. In addition, it shows statistical importance. The mediation model that links electronic service quality, electronic customer satisfaction, and electronic loyalty in the use of OVO yields substantial findings in explaining the correlations between these variables in this context.Therefore, Hypothesis 4 is accepted.

Table 4. Hypothesis testing data analysis results for GoPay, DANA, and OVO (path coefficients)

Relationship between the variables	**GoPay**			
	Coefficient Parameter	**T Statistic**	**P Value**	**Description**
E-service quality (X) -> E-loyalty (Y)	0,454	2,833	0,0048	Significant**
E-service quality (X) -> E-satisfaction (Z)	0,960	85,884	0,000	Significant**
E-satisfaction (Z) -> E-loyalty (Y)	0,481	2,958	0,003	Significant**
E-service quality -> E-satisfaction -> E-loyalty	0,462	2,924	0,004	Significant**

Relationship between the variables	DANA			
	Coefficient Parameter	**T Statistic**	**P Value**	**Description**
E-service quality (X) -> E-loyalty (Y)	0,682	4,846	0,000	Significant**
E-service quality (X) -> E-satisfaction (Z)	0,947	70,399	0,000	Significant**
E-satisfaction (Z) -> E-loyalty (Y)	0,254	1,734	0,084	Not Significant**
E-service quality -> E-satisfaction -> E-loyalty	0,241	1,717	0,087	Not Significant**
Relationship between the variables	**OVO**			
	Coefficient Parameter	**T Statistic**	**P Value**	**Description**
E-service quality (X) -> E-loyalty (Y)	0,467	4,395	0,000	Significant**
E-service quality (X) -> E-satisfaction (Z)	0,944	58,742	0,000	Significant**
E-satisfaction (Z) -> E-loyalty (Y)	0,487	4,751	0,000	Significant**
E-service quality -> E-satisfaction -> E-loyalty	0,460	4,670	0,000	Significant**

Source: Processed by the researcher

4. Comparison Analysis of Digital Payment System Dimensions: GoPay, DANA, and OVO

   a. GoPay - E-Wallet

   When considering the influence on E-service quality within GoPay, the dimension that exerts the most significant impact is "Responsiveness," with a noteworthy parameter coefficient of 0.994 and a p-value of 0.000. This underscores the critical importance of GoPay's ability to promptly address customer needs in determining the quality of its electronic services. Closely following in terms of contribution are "System Availability" (parameter coefficient: 0.987) and "Fulfilment" (parameter coefficient: 0.985), both of which have a substantial impact on GoPay service quality. "Compensation" plays a pivotal role , albeit with a slightly lower coefficient of 0.955, but it maintains statistical significance (p-value: 0.000).

   Regarding E-satisfaction within GoPay, the leading contributor is "Customer Satisfaction with Services," possessing the highest coefficient of 0.974 and significant statistical relevance (p-value: 0.000). Subsequently, "Customer Satisfaction with Product Variety" (coefficient: 0.972) and "Customer Satisfaction with Responsiveness and Response" (coefficient: 0.970) significantly enhanced overall customer satisfaction within the GoPay platform. "Customer Satisfaction with Product Pricing" and "Customer Satisfaction with Information," while having slightly lower coefficients (0.957 and 0.956, respectively), still exert substantial influence and maintain statistical significance (p-value: 0.000). Lastly, "Customer Satisfaction with Convenience" has the smallest contribution but is still statistically significant, with a coefficient of 0.953.

   Regarding E-Loyalty in GoPay, the dimension that stands out as the most impactful is "Recommendation to Others," with the highest parameter coefficient of 0.975, and it is statistically significant with a p-value of 0.000. This highlights that the ability to recommend the platform to others significantly shapes customer loyalty within GoPay. Closely following are "Regular Reuse" (parameter coefficient: 0.969) and "Cross-Product and Service Purchases" (parameter coefficient: 0.968), both of which are also statistically

significant (p-value: 0.000). These dimensions strongly contribute to enhancing customer loyalty. "Resistance to Competitors" plays a slightly lesser but still vital role, with a coefficient of 0.963, and it remains statistically significant (p-value: 0.000).

b. DANA - E-Wallet:

In the context of E-service quality within DANA, the dimension that emerges as the most influential is "Responsiveness," with a substantial parameter coefficient of 0.987 and a significant p-value of 0.000. This highlights the crucial role of DANA's ability to promptly meet customer needs in shaping the quality of its electronic services. Closely followed in significance are "System Availability" (parameter coefficient: 0.985) and "Fulfillment" (parameter coefficient: 0.976), both of which make significant contributions to the high-quality service offered by DANA. "Compensation" also plays a pivotal role, although with a slightly lower coefficient of 0.949, but it maintains statistical significance (p-value: 0.000).

Concerning E-satisfaction within DANA, the dimension with the most substantial impact is "Customer Satisfaction with Product Pricing," exhibiting a notable parameter coefficient of 0.966 and an significant p-value of 0.000. This underscores that customer satisfaction with DANA's pricing has the most profound influence on overall customer satisfaction within the platform. Subsequently, "Customer Satisfaction with Information" (parameter coefficient: 0.961), "Customer Satisfaction with Services" (parameter coefficient: 0.959), and "Customer Satisfaction with Responsiveness and Response" (parameter coefficient: 0.957) all make significant contributions and maintain statistical significance (p-value: 0.000). Together, these dimensions collectively contribute to enhancing customer satisfaction within DANA.

"Customer Satisfaction with Product Variety" also plays a role, although to a slightly lesser extent. Finally, "Customer Satisfaction with Convenience" has a smaller impact but still maintains statistical significance, with a coefficient of 0.910. Regarding E-Loyalty in DANA, the dimension that stands out as the most influential is "Regular Reuse," with a significant parameter coefficient of 0.965 and a significant p-value of 0.000. This underscores the importance of customers using the platform regularly, as it has the most substantial impact on overall customer loyalty within DANA. Following closely are "Resistance to Competitors" (parameter coefficient: 0.961) and "Recommendation to Others" (parameter coefficient: 0.947), both of which also have strong and statistically significant contributions (p-value: 0.000) to enhancing customer loyalty. "Cross-Product and Service Purchases" plays a slightly lesser but still significant role, with a coefficient of 0.938. Nonetheless, this dimension maintains its significance in influencing customer loyalty within the DANA platform.

c. OVO - E-Wallet

Regarding shaping E-Loyalty within the OVO e-wallet, the dimension with the most significant contribution is "Recommendation to Others," with a value of 0.984. This indicates that the ability to recommend OVO to friends and family has a significant impact on building user loyalty. Following very closely is "Cross-Product and Service Purchases," with a value of 0.977, which shows that flexibility in using OVO for various financial needs is also crucial in strengthening customer loyalty. The next dimension with a substantial contribution is "Regular Reuse," with a value of 0.971, suggesting that the sustained use of OVO services also plays a key role in retaining loyalty. Meanwhile, the dimension with the smallest contribution is "Resistance to Competitors," although it still holds a significant value at 0.961, indicating that this factor, while important, has a slightly smaller impact

than other dimensions in shaping E-Loyalty among OVO users. In terms of shaping E-satisfaction within the OVO e-wallet, the dimension with the most substantial contribution is "Customer Satisfaction with Convenience," which has the highest parameter coefficient at 0.979.

This significant result indicates that the perceived convenience of using OVO services has the most substantial impact on user satisfaction. The following are three other dimensions with high and significant parameter coefficients: "Customer Satisfaction with Responsiveness and Response" (0.972), "Customer Satisfaction with Information" (0.972), and "Customer Satisfaction with Services" (0.971). This suggests that responsiveness, the information provided, and the quality of OVO's services also contribute highly to creating customer satisfaction. On the other hand, two dimensions with slightly smaller impacts on E-satisfaction are "Customer Satisfaction with Product Variety" (0.967) and "Customer Satisfaction with Product Pricing" (0.948). When it comes to e-Loyalty within the OVO e-wallet, the dimension with the most significant contribution is "Recommendation to Others" with the highest parameter coefficient of 0.984. This indicates that OVO users' ability to recommend the platform to others has a very significant impact on building and maintaining user loyalty.

Following very closely is "Cross-Product and Service Purchases" with a parameter coefficient of 0.977, showing that using OVO for various cross-product and service transactions also makes a substantial contribution to shaping E-Loyalty. Furthermore, "Regular Reuse" with a parameter coefficient of 0.971 also has a significant influence, highlighting that continuous use of OVO services is an important factor in retaining customer loyalty. The dimension with the smallest, yet still significant, contribution is "Resistance to Competitors" with a parameter coefficient of 0.961.

Table 5. Testing of Research Variable Dimensions for GoPay, DANA, and OVO

Variable	GoPay			
	Coefficient Parameter	T-Statistic	P Value	Description
E-loyalty (Y)				
Recommending Others	0,975	132,807	0,000	Significant**
Showing Immunity to Competitors	0,963	133,939	0,000	Significant**
Cross-Product and Service Purchases	0,968	130,388	0,000	Significant**
Regular Reuse	0,969	132,415	0,000	Significant**
E-satisfaction (Z)				
Customer Satisfaction with the Product Price	0,957	50,485	0,000	Significant**
Customer Satisfaction with Information.	0,956	78,651	0,000	Significant**
Customer Satisfaction with Service.	0,974	139,572	0,000	Significant**
Customer Satisfaction with Product Variety.	0,972	133,156	0,000	Significant**
Customer Satisfaction with Responses and Answers.	0,953	67,511	0,000	Significant**
Customer Satisfaction with Convenience.	0,970	121,381	0,000	Significant**
E-service quality (X)				
System Availability	0,955	83,209	0,000	Significant**
Fulfillment	0,985	200,794	0,000	Significant**
Responsiveness	0,994	742,870	0,000	Significant**
Compensation	0,987	317,481	0,000	Significant**
Variable	DANA			

	Coefficient Parameter	T Statistic	P Value	Description
E-loyalty (Y)				
Recommending Others	0,947	56,379	0,000	Significant**
Showing Immunity to Competitors	0,961	108,572	0,000	Significant**
Cross-Product and Service Purchases	0,938	44,673	0,000	Significant**
Regular Reuse	0,965	150,968	0,000	Significant**
E-satisfaction (Z)				
Customer Satisfaction with the Product Price	0,966	114,059	0,000	Significant**
Customer Satisfaction with Information.	0,961	78,509	0,000	Significant**
Customer Satisfaction with Service.	0,959	109,652	0,000	Significant**
Customer Satisfaction with Product Variety.	0,955	92,230	0,000	Significant**
Customer Satisfaction with Responses and Answers.	0,910	23,153	0,000	Significant**
Customer Satisfaction with Convenience.	0,957	77,938	0,000	Significant**
E-service quality (X)				
System Availability	0,949	72,217	0,000	Significant**
Fulfillment	0,976	146,177	0,000	Significant**
Responsiveness	0,987	307,149	0,000	Significant**
Compensation	0,985	250,045	0,000	Significant**
Variable	OVO			
	Coefficient Parameter	T Statistic	P Value	Description
E-loyalty (Y)				
Recommending Others	0,984	226,760	0,000	Significant**
Showing Immunity to Competitors	0,961	75,549	0,000	Significant**
Cross-Product and Service Purchases	0,977	215,871	0,000	Significant**
Regular Reuse	0,971	132,781	0,000	Significant**
E-satisfaction (Z)				
Customer Satisfaction with the Product Price	0,948	70,440	0,000	Significant**
Customer Satisfaction with Information.	0,972	139,158	0,000	Significant**
Customer Satisfaction with Service.	0,971	127,464	0,000	Significant**
Customer Satisfaction with Product Variety.	0,967	82,629	0,000	Significant**
Customer Satisfaction with Responses and Answers.	0,979	178,996	0,000	Significant**
Customer Satisfaction with Convenience.	0,972	126,030	0,000	Significant**
E-service quality (X)				
System Availability	0,951	56,565	0,000	Significant**
Fulfillment	0,986	278,014	0,000	Significant**
Responsiveness	0,989	339,673	0,000	Significant**
Compensation	0,981	211,875	0,000	Significant**

Source: Processed by the researcher

CONCLUSIONS

The research findings highlight the significant impact of e-service quality on e-satisfaction and e-loyalty in digital payment services, particularly GoPay, OVO, and DANA. This study emphasizes the importance of the dynamics of E-service quality, E-satisfaction, and E-loyalty in digital payment services such as GoPay, OVO, and DANA. Higher E-service quality positively influences both E-satisfaction and E-loyalty across all three platforms. However, the impact of E-

satisfaction on E-loyalty is statistically significant for GoPay and OVO but not for DANA, indicating unique factors influencing customer loyalty in DANA. A comparative evaluation among GoPay, OVO, and DANA reveals that E-service quality plays the most influential role in shaping E-satisfaction and E-loyalty. Responsiveness emerges as a crucial component, emphasizing the need to promptly address customer needs.

Theoretical implications reinforce established theories regarding the positive impact of e-service quality on customer satisfaction and loyalty, with variations across platforms. Practical implications offer tailored recommendations for each e-wallet. For GoPay, prioritizing customer responsiveness, improving system fulfillment, and consistently enhancing customer satisfaction can boost loyalty. DANA should focus on improving its responsiveness to client requests, maintaining competitive pricing, and encouraging frequent use of the service. OVO should emphasize platform responsiveness, ensure user convenience, and strengthen users' ability to recommend the platform for sustained loyalty.

All three e-wallets have successfully prioritized responsiveness to customer needs by achieving high-quality digital services, particularly in terms of responsiveness and system fulfillment. Therefore, strategic steps focused on improving service quality, customer responsiveness, and system fulfillment can be the key to success for brands to achieve similar results.

LIMITATION AND FURTHER RESEARCH

As a crucial component of the research framework, the limitations of this study must be addressed. First, the scope of this study is limited to three primary variables: e-service quality, e-customer satisfaction, and e-customer loyalty. These numbers indicate that the model's ability to explain the observed variances is strong. However, it is crucial to consider additional variables that could affect consumer behavior while using digital payment systems. Another drawback is the focus on only a few digital payment options, especially GoPay, OVO, and DANA, which might not account for all the variety of digital payment options on the market.

Several ideas can be considered in the next study. First, further research should be conducted to determine the other variables that affect consumer loyalty and satisfaction in the digital payment sector. Further insights into consumer experiences and the variables influencing customer behavior can be gained by combining quantitative and qualitative research methods. Future studies would be more thorough if the research sample was expanded to cover a wider variety of digital payment providers and more respondents.

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