

# The Influence of Perceived Usefulness and Cashback Reward Program Mediated by E-wallet Engagement on E-wallet User Satisfaction

Nurmalasari<sup>1\*</sup>, Nur Afifah<sup>2</sup>, Mustaruddin<sup>3</sup>

<sup>1</sup> Students Doctoral Program in Management Science, Universitas Tanjungpura

<sup>1</sup>Universitas Bina Sarana Informatika

Jl. Abdul Rahman Saleh No.18, Bangka Belitung Laut, Kec. Pontianak Tenggara, Kota Pontianak, Indonesia

<sup>2,3</sup> Lecturer Doctoral Program in Management Science, Universitas Tanjungpura

Jl. Prof. Dr. H Jl. Profesor Dokter H. Hadari Nawawi, Bansir Laut, Kota Pontianak, Indonesia

Correspondence e-mail: [b3081241003@student.untan.ac.id](mailto:b3081241003@student.untan.ac.id)

Submission:	Revision:	Acceptance:	Available Online:
26-06-2025	08-07-2025	14-07-2025	01-09-2025

**Abstract** - The rapid growth of digital payment systems makes e-wallets increasingly important in the financial technology sector. This study examines the effect of perceived usefulness and cashback reward programs on e-wallet user satisfaction, with e-wallet involvement as a mediating variable. The data collection techniques are observation of how users interact with e-wallet applications through usage analysis and monitoring of how often transactions are made, interviews with the aim of gaining in-depth insight into user experience and literature studies by collecting journals, articles related to this study. The data analysis uses the Structural Equation Modeling with Partial Least Squares (SEM-PLS) approach with SmartPLS 3.0, software following a two-stage approach: measurement model evaluation (outer model) and structural model evaluation (inner model). The measurement model assessment included convergent validity, discriminant validity, and reliability tests. The structural model evaluation examined path coefficients, significance levels, R-square values, and effect sizes. with data collected from 300 e-wallet users through purposive sampling. The population consisted of e-wallet users in Indonesia, with the sample selected using purposive sampling technique. The inclusion criteria required respondents to have used e-wallet applications for at least three months. The results indicate that perceived usefulness ( $\beta=0.137$ ,  $p<0.05$ ) and cashback reward programs ( $\beta=0.236$ ,  $p<0.001$ ) significantly influence e-wallet engagement. E-wallet engagement significantly affects user satisfaction ( $\beta=0.287$ ,  $p<0.001$ ), and perceived usefulness directly influences satisfaction ( $\beta=0.362$ ,  $p<0.001$ ). The mediation analysis reveals that e-wallet engagement partially mediates the relationship between both independent variables and user satisfaction. The findings suggest that e-wallet providers should focus on enhancing perceived usefulness and designing attractive reward programs while maintaining high user engagement to drive satisfaction.

**Keywords:** perceived usefulness, cashback reward program, e-wallet satisfaction

## 1. Introduction

The digital transformation era has fundamentally changed consumer payment behavior, with electronic wallets (e-wallets) emerging as a dominant force in the financial technology landscape. The Fourth Industrial Revolution has created numerous opportunities across various sectors to adapt to digital transformation, particularly in the financial industry, which has rapidly developed mobile cashless payment systems that have become widespread and extensively used (Abdulla & Al-Alawi, 2023). The COVID-19 pandemic has further accelerated e-wallet adoption as social distancing and contactless transactions became necessary to limit virus transmission between people.

E-wallets represent electronic devices or online services that enable individuals to conduct electronic transactions, allowing users to store funds

and make payments for various purposes including tax payments, food purchases, ticket bookings, and other services (Izzah et al., 2022). The growth of e-wallet usage has been remarkable, with global digital payment transactions expected to reach significant volumes, driven by high smartphone penetration, increasing number of merchants going digital, more reliable payment system regulations, and a robust ecosystem of service providers (Basmantra et al., 2024). Despite their growing popularity, e-wallet user satisfaction levels remain inconsistent across different regions and demographics, indicating the presence of various factors that influence user experience and satisfaction outcomes.

The fintech innovation of e-money products in the financial sector has demonstrated significant economic benefits, yet physical cash for financial transactions remains prevalent in many developing

countries (Omodero, 2021). This situation presents both opportunities and challenges for e-wallet service providers who must understand the complex factors influencing user satisfaction and continued usage. Research has shown that the impact of e-wallets on current generations varies significantly, with awareness being a key factor in reducing negative impacts and maximizing user satisfaction (Subaramaniam et al., 2020).

Perceived Usefulness is defined as users' subjective assessment of how a particular technology can enhance their performance and effectiveness in conducting daily transactions. Based on the Technology Acceptance Model (TAM), perceived usefulness represents the degree to which individuals believe that using e-wallets would improve their payment experience and provide functional benefits (Ahmad et al., 2023). In the context of e-wallet satisfaction, perceived usefulness encompasses factors such as transaction speed, convenience, accessibility, and overall efficiency compared to traditional payment methods.

Previous research has identified multiple factors affecting e-wallet user satisfaction. The Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT) have been extensively used to understand technology satisfaction behaviors ((Ahmad et al., 2023); (Shukri et al., 2024)). Studies have consistently shown that perceived usefulness, along with perceived ease of use, performance expectancy, and effort expectancy, significantly influences users' satisfaction with e-wallet services (Yann et al., 2019). The importance of perceived usefulness has been particularly emphasized in developing nations where users carefully evaluate the practical benefits of new technologies before experiencing satisfaction (Soodan & Rana, 2020).

Cashback and Reward Programs represent financial incentive mechanisms designed to motivate user engagement and retention through immediate monetary benefits or rewards for transactions. These programs have gained significant attention as satisfaction drivers in the competitive e-wallet market. The implementation of cashback and reward systems creates compelling value propositions that encourage users to choose specific e-wallet platforms over alternatives while enhancing their overall satisfaction (Firdaus & Lubis, 2022). Research indicates that price value and perceived savings significantly influence users' satisfaction with e-wallets, particularly when combined with attractive reward mechanisms (Soodan & Rana, 2020).

The effectiveness of cashback and reward programs has been demonstrated across various markets, with studies showing that hedonic motivation derived from rewards and financial benefits plays a crucial role in user satisfaction (Katini et al., 2023). These programs not only attract new users but also contribute to sustained satisfaction

by creating positive reinforcement cycles that encourage continued engagement with the platform. E-wallet Engagement encompasses the level of user interaction, involvement, and active participation with e-wallet platforms and their features. This construct goes beyond simple usage frequency to include emotional attachment, behavioral involvement, and cognitive engagement with the service. E-wallet engagement reflects users' psychological connection to the platform and their willingness to explore various features and services offered (Che Nawi et al., 2024).

Research has shown that user engagement serves as a critical mediator between initial satisfaction factors and sustained satisfaction behavior. High levels of engagement are associated with increased platform loyalty, higher transaction volumes, and greater satisfaction with the service. The concept of engagement has become increasingly important as e-wallet providers recognize that initial satisfaction does not guarantee long-term success without sustained user involvement (Jamaludin et al., 2024).

E-wallet User Satisfaction refers to users' overall evaluation and contentment with their e-wallet service experience. Satisfaction encompasses users' assessment of how well the e-wallet service meets their expectations, needs, and preferences in terms of functionality, performance, and value delivery. User satisfaction is a multidimensional construct that includes cognitive evaluation of service quality, emotional responses to service experiences, and behavioral intentions toward continued usage (Barua & Deshpande, 2025).

Studies have identified various factors influencing e-wallet user satisfaction, including technological factors (security, ease of use, reliability), service quality factors (responsiveness, convenience, efficiency), and economic factors (cost savings, rewards, value for money). The satisfaction process is complex and multifaceted, requiring careful consideration of user expectations, perceived performance, and contextual factors (Libaque-Saenz et al., 2024). While previous studies have examined individual factors affecting e-wallet user satisfaction, limited research has explored the mediating mechanisms through which these factors influence satisfaction outcomes. Most existing studies focus on direct relationships between satisfaction factors and outcomes, without considering the intermediate processes that may explain these relationships (Yann et al., 2019). Research conducted (Nurcahyo et al., 2023) showed a large difference in the level of satisfaction of e-wallet users in Indonesia. Negative satisfaction figures indicate that many users are dissatisfied, but the underlying mechanisms that explain how initial perceptions translate into satisfaction outcomes are still under-explored. Although studies have identified perceived usefulness and financial incentives as important

factors, their relative contributions and interactive effects on user satisfaction require further investigation. There is still a lack of empirical investigation into the roles of perceived enjoyment and rewards in influencing e-wallet adoption, with existing research often lacking a comprehensive understanding of how extrinsic motivation intersects with technology adoption factors (Shetu et al., 2022).

The role of user engagement as a mediating variable has received insufficient attention in the e-wallet satisfaction literature, despite its theoretical importance in explaining how initial perceptions and incentives translate into sustained satisfaction behavior.

Furthermore, comparative analysis of the relative importance of different satisfaction factors remains limited. While studies have identified perceived usefulness and financial incentives as important factors, their relative contributions and interactive effects on user satisfaction require further investigation. The current study addresses these gaps by examining the mediating role of e-wallet engagement and comparing the relative influences of perceived usefulness and cashback reward programs on satisfaction outcomes.

Additionally, most existing research has been conducted in developed markets, with limited focus on developing countries where e-wallet satisfaction patterns may differ significantly due to varying technological infrastructure, financial literacy levels, and cultural factors (Al-Qubati & Al-Shaibany, 2024). This study contributes to filling this geographical gap by focusing on the Indonesian market, which represents a significant emerging economy with unique characteristics relevant to e-wallet satisfaction.

This study aims to examine the influence of perceived usefulness and cashback reward programs on e-wallet user satisfaction, with particular attention to the mediating role of e-wallet engagement. The research contributes to the existing literature by providing empirical evidence of the mediation mechanism and offers practical insights for e-wallet service providers and policymakers in developing strategies to enhance user satisfaction. The findings will help understand how user engagement serves as a bridge between initial satisfaction factors and sustained satisfaction behavior, providing valuable insights for both theoretical development and practical application in the e-wallet industry. The indicators of each variable are Perceived Usefulness: Functional Efficiency and Utility Enhancement (Kınış & Tanova, 2022; Kumar et al., 2025), Cashback Reward Programs: Financial Incentive Attractiveness, Reward Program Satisfaction (Huang et al., 2024; Rahman et al., 2024), E-wallet Engagement: Behavioral Involvement, Emotional Attachment, (Che Nawi et al., 2024; Giggs et al., 2024; Rahman et al., 2024) and E-wallet User Satisfaction: Service Fulfillment and Overall

Contentment (Kumar et al., 2025; Libaque-Saenz et al., 2024; Nurcahyo et al., 2023).

## 2. Research Methods

This research employed a quantitative approach using a cross-sectional survey design to examine the relationships between perceived usefulness, cashback reward programs, e-wallet engagement, and user satisfaction. The study utilized Structural Equation Modeling with Partial Least Squares (SEM-PLS) to analyze the proposed model and test the hypotheses. The data collection techniques are observation of how users interact with e-wallet applications through usage analysis and monitoring of how often transactions are made, interviews with the aim of gaining in-depth insight into user experience and literature studies by collecting journals, articles related to this study.

The population consisted of e-wallet users in Indonesia, with the sample selected using purposive sampling technique. The inclusion criteria required respondents to have used e-wallet applications for at least three months. Based on the rule of thumb for SEM-PLS analysis, which requires a minimum of 10 times the largest number of indicators in any construct, a sample size of 300 respondents was determined as adequate for this study.

Data collection was conducted through a structured questionnaire using a 5-point Likert scale (1=strongly disagree to 5=strongly agree). The questionnaire was designed to measure four main constructs: perceived usefulness (2 indicators: X1.1, X1.2), cashback reward programs (2 indicators: X2.1, X2.2), e-wallet engagement (2 indicators: M1.1, M1.2), and e-wallet user satisfaction (2 indicators: Y1.1, Y1.2). All measurement items were adapted from validated instruments used in previous e-wallet satisfaction studies.

The foundation of this research model stems from the progression of technology acceptance frameworks and their implementation in digital payment contexts. The initial groundwork was established through Davis's (1989) Technology Acceptance Model (TAM), which identified perceived usefulness and perceived ease of use as fundamental factors influencing technology adoption decisions. Following this foundation, Venkatesh et al. (2003) enhanced the theoretical framework by introducing the Unified Theory of Acceptance and Use of Technology (UTAUT), which integrated performance expectancy, effort expectancy, social influence, and facilitating conditions as key determinants.

Drawing from these foundational studies, contemporary researchers have recognized substantial gaps in comprehending user satisfaction mechanisms within e-wallet environments (Kumar et al., 2025) observed that "limited research on users' intention to continue use e-wallets is conducted, with existing research often lacking comprehensive

understanding of how extrinsic motivation intersects with factors of technology adoption." This insight emphasized the necessity for more advanced theoretical frameworks capable of elucidating satisfaction development processes that extend beyond initial technology acceptance.

The incorporation of engagement as a mediating construct originated from (Giggs et al., 2024) innovative research on fintech gamification, which established that "user attitude plays a pivotal role in shaping intention to continue using e-wallet apps, acting as a mediator." Their investigation disclosed that engagement processes could connect initial technology assessments with sustained usage patterns. Correspondingly, (Rahman et al., 2024) highlighted the significance of comprehending how "consumers' attitudes toward m-wallets play a role as a mediator between the perceived effectiveness and continued use intentions," indicating that intermediary psychological mechanisms substantially affect satisfaction results.

The inclusion of cashback reward programs as a separate antecedent was driven by Katini et al.'s (2023) discoveries that "hedonic motivation derived from rewards and financial benefits plays a crucial role in user satisfaction," and (Firdaus & Lubis, 2022) finding that "cashback and reward systems create compelling value propositions that encourage users to choose specific e-wallet platforms over alternatives." These investigations revealed that monetary incentives function through distinct pathways compared to conventional utility assessments, necessitating independent theoretical consideration.

Recent research (Che Nawi et al., 2024) additionally confirmed the necessity for mediation-oriented frameworks through their sequential mediation investigation, which established that "engagement serves as a critical mediator between initial satisfaction factors and sustained satisfaction behavior." Their research illustrated that direct relationship models, despite being statistically meaningful, were inadequate in explaining the intricacies of satisfaction development in digital payment environments.

The present study's framework integrates these theoretical advancements by establishing e-wallet engagement as a primary mediating process between satisfaction predictors (perceived usefulness and cashback rewards) and user satisfaction results. This methodology responds to (Nurcahyo et al., 2023) appeal for more advanced analytical structures to comprehend "the underlying mechanisms explaining how initial perceptions translate into satisfaction outcomes" within developing nation settings.

The research model proposed four main hypotheses:

H1: Perceived usefulness positively influences e-wallet engagement

H2: Cashback reward programs positively influence e-wallet engagement

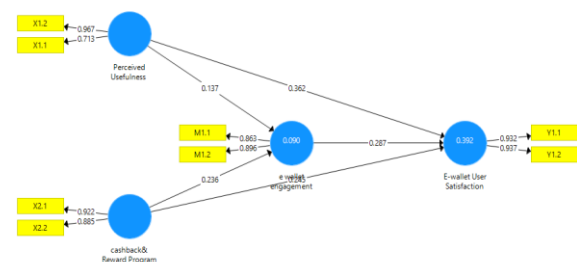
H3: E-wallet engagement positively influences e-wallet user satisfaction

H4: Perceived usefulness positively influences e-wallet user satisfaction

Additional mediation hypotheses examined the indirect effects of perceived usefulness and cashback reward programs on user satisfaction through e-wallet engagement.

Data analysis was conducted using SmartPLS software following a two-stage approach: measurement model evaluation (outer model) and structural model evaluation (inner model). The measurement model assessment included convergent validity, discriminant validity, and reliability tests. The structural model evaluation examined path coefficients, significance levels, R-square values, and effect sizes.

### 3. Results and Discussion



#### 3.1. Measurement Model Evaluation

The measurement model evaluation confirmed the reliability and validity of all constructs. Table 1 presents the results of convergent validity and reliability assessment.

Table 1. Convergent Validity and Reliability Results

Construct	Indicator	Loading factor	Cronbach's Alpha	Composite Reliability	AVE
Perceived Usefulness	X1.1	0.713	0.850	0.901	0.821
	X1.2	0.967			
cashback& Reward Program	X2.1	0.922	0.798	0.882	0.789
	X2.2	0.885			
e wallet engagement	M1.1	0.863	0.742	0.856	0.748
	M1.2	0.896			
E-wallet User Satisfaction	Y1.1	0.932	0.865	0.928	0.866
	Y1.2	0.937			

Source : research result,2025

Based on Table 1 Results of Convergent Validity and Reliability that all loading factors exceeded the recommended threshold of 0.70, indicating adequate convergent validity. Cronbach's Alpha and Composite Reliability values were above 0.70, demonstrating satisfactory internal consistency. The Average Variance Extracted (AVE) values

surpassed 0.50, confirming that each construct explained more variance in its indicators than measurement error.

Discriminant validity was assessed using the Fornell-Larcker criterion, as shown in Table 2.

Table 2. Discriminant Validity Assessment

Construct	PU	CRP	EWE	EWS
Perceived Usefulness (PU)	0.906			
cashback& Reward Program (CRP)	0.645	0.888		
e wallet engagement (EWE)	0.712	0.689	0.865	
E-wallet User Satisfaction (EWS)	0.758	0.634	0.823	0.931

Source : research result,2025

Based on Table 2 Discriminant Validity Assessment that the diagonal elements (square root of AVE) were larger than the off-diagonal elements (correlations), confirming adequate discriminant validity among all constructs.

### 3.2. Structural Model Evaluation

The structural model evaluation examined the explanatory power and predictive relevance of the proposed model. Table 3 presents the R-square and Q-square results.

Table 3. R-Square and Q-Square Results

Endogenous Construct	R-Square	R-square Adjusted	Q-Square
E-Wallet Engagement	0.600	0.592	0.445
E-Wallet User Satisfaction	0.392	0.385	0.338

Source : research result,2025

Based on Table 3 R-Square and Q-Square Results that the model explained 60.0% of the variance in e-wallet engagement and 39.2% of the variance in e-wallet user satisfaction. The Q-square values were positive, indicating adequate predictive relevance of the model.

### 3.3. Hypothesis Testing

Table 4 presents the results of direct effect hypothesis testing.

Table 4. Direct Effects Hypothesis Testing

Hypothesis	Path	Coefficient	T-Statistics	P-Values	Decision
H1	Perceived Usefulness → E-wallet Engagement	0.137	2.145	0.032	Supported
H2	Cashback Reward Program → E-wallet Engagement	0.236	3.784	0.000	Supported
H3	E-wallet Engagement → E-wallet User Satisfaction	0.287	4.521	0.000	Supported
H4	Perceived Usefulness → E-wallet User Satisfaction	0.362	5.892	0.000	Supported

Source : research result,2025

Based on Table 4 Direct Effects Hypothesis Testing that all four direct effect hypotheses were

supported, indicating significant positive relationships between the constructs as proposed.

The mediation analysis results are presented in Table 5.

Table 5. Mediation Analysis Results

Mediation Path	Indirect Effect	T-Statistics	P-Values	Mediation Type
Perceived Usefulness → E-wallet Engagement → E-wallet User Satisfaction	0.039	1.987	0.047	Partial Mediation
Cashback Reward Program → E-wallet Engagement → E-wallet User Satisfaction	0.068	2.856	0.004	Partial Mediation

Source : research result,2025

Based on Table 5 Mediation Analysis Results that both mediation effects were significant, indicating that e-wallet engagement partially mediates the relationships between perceived usefulness and user satisfaction, as well as between cashback reward programs and user satisfaction.

The findings reveal several important insights regarding e-wallet user satisfaction behavior. First, perceived usefulness significantly influences e-wallet engagement ( $\beta=0.137$ ,  $p<0.05$ ), supporting the fundamental proposition of the Technology Acceptance Model in the context of user satisfaction. This result aligns with previous research by (Ahmad et al., 2023) and (Che Nawi et al., 2024) confirming that users' perceptions of e-wallet benefits and utility drive their active involvement with the platform, which ultimately contributes to their satisfaction.

Second, cashback reward programs demonstrate a stronger influence on e-wallet engagement ( $\beta=0.236$ ,  $p<0.001$ ) compared to perceived usefulness. This finding suggests that financial incentives serve as powerful motivators for user engagement, which subsequently enhances user satisfaction, consistent with the observations by (Permatasari & Kartawinata, 2021) regarding the importance of perceived benefits in fintech satisfaction. The immediate and tangible nature of cashback rewards creates compelling value propositions that encourage users to explore and actively use e-wallet features, leading to higher satisfaction levels.

Third, e-wallet engagement significantly affects user satisfaction ( $\beta=0.287$ ,  $p<0.001$ ), highlighting the crucial role of user involvement in translating initial perceptions and incentives into sustained satisfaction outcomes. This result supports the notion that engagement acts as a bridge between initial attraction factors and actual satisfaction experiences, as suggested by (Katini et al., 2023) in their study of mobile wallet usage satisfaction.

Fourth, perceived usefulness maintains the strongest direct influence on user satisfaction ( $\beta=0.362$ ,  $p<0.001$ ), emphasizing that fundamental utility perceptions remain paramount in satisfaction decisions. This finding aligns with contemporary phenomena observed in the Indonesian e-wallet market, where users consistently prioritize functional benefits over promotional incentives when making long-term adoption decisions. The result reinforces the enduring relevance of the Technology Acceptance Model in digital payment satisfaction contexts, corroborating findings (Kınış & Tanova, 2022) who demonstrated that perceived usefulness significantly influences e-wallet adoption in developing economies, and (Soodan & Rana, 2020) who found similar patterns in their UTAUT2 extension study. The predominance of perceived usefulness mirrors actual marketplace conditions where leading e-wallet services such as GoPay and OVO in Indonesia have achieved dominant positions mainly by delivering exceptional operational performance and system dependability rather than relying exclusively on intensive promotional reward strategies. This outcome aligns with the findings of (Kumar et al., 2025), who noted that "perceived usefulness found the strong predictor of intention to continue use of e-wallets," which holds particular significance in emerging economies where consumers systematically assess functional advantages prior to adopting digital payment solutions. Additionally, this finding clarifies why e-wallet service providers that concentrate exclusively on incentive-based approaches while neglecting essential platform robustness frequently encounter elevated user attrition, as evidenced in (Nurcahyo et al., 2023) investigation of e-wallet user satisfaction deficiencies in Indonesia.

The mediation examination demonstrates that e-wallet engagement serves as a partial mediator in both associations, suggesting that although direct influences are present, the engagement process offers supplementary explanatory capacity for comprehending user satisfaction. This partial mediation outcome corroborates the recent investigation (Kumar et al., 2025) regarding gamification in financial technology, which established that "user attitude plays a pivotal role in shaping intention to continue using e-wallet apps, acting as a mediator." The incomplete character of this mediation implies a bifurcated pathway framework that aligns with (Rahman et al., 2024) conclusions demonstrating how both direct cognitive assessments and engagement-facilitated emotional reactions contribute to satisfaction development in mobile wallet environments.

This occurrence becomes especially apparent within the Indonesian marketplace, where effective e-wallet users characteristically exhibit elevated engagement through regular feature utilization, diverse transaction activities, and platform commitment, while concurrently preserving robust

utility perceptions. The partial mediation process clarifies why certain users possessing equivalent perceived usefulness measurements display varying satisfaction degrees according to their engagement behaviors—a pattern documented (Che Nawi et al., 2024) in their sequential mediation investigation of electronic wallet adoption. The findings demonstrate that perceived usefulness and cashback incentives can affect satisfaction both immediately via cognitive utility assessments and indirectly through amplified user interaction with the platform, offering a more sophisticated comprehension of satisfaction development mechanisms than previously documented in academic research.

These findings have important implications for e-wallet service providers seeking to enhance user satisfaction. The results suggest that successful satisfaction strategies should focus on three key areas: enhancing perceived usefulness through improved functionality and user experience, designing attractive and sustainable reward programs, and fostering high levels of user engagement through interactive features and personalized services.

The study's results also contribute to the theoretical understanding of technology satisfaction by demonstrating the mediating role of engagement in the satisfaction process. This extends existing models by highlighting the importance of ongoing user interaction and involvement as a mechanism through which initial perceptions and incentives translate into sustained satisfaction behavior.

#### 4. Conclusion

This study examined the influence of perceived usefulness and cashback reward programs on e-wallet user satisfaction, with e-wallet engagement serving as a mediating variable. The findings confirm that both perceived usefulness and cashback reward programs significantly influence e-wallet engagement, which in turn affects user satisfaction. E-wallet engagement partially mediates these relationships, indicating that user involvement with the platform serves as an important mechanism through which initial perceptions and incentives translate into satisfaction outcomes.

The research provides several practical implications for e-wallet service providers seeking to enhance user satisfaction. First, enhancing perceived usefulness through improved functionality, user interface design, and service reliability remains fundamental to driving satisfaction. Second, well-designed cashback and reward programs can effectively motivate user engagement and subsequent satisfaction. Third, fostering high levels of user engagement through interactive features, personalized experiences, and community-building initiatives can strengthen the path from initial interest to sustained satisfaction.

Future research should explore additional factors that may influence the proposed relationships,

such as trust, security concerns, and service quality dimensions. Longitudinal studies could provide deeper insights into the temporal dynamics of the satisfaction process and the long-term effects of engagement on sustained satisfaction behavior.

## References

- Abdulla, I. S., & Al-Alawi, A. I. (2023). Fintech in the Fourth Industrial Revolution: Literature Review on Usage and Concerns of e-Wallet Payment Transactions. In *2023 International Conference on Cyber Management and Engineering, CyMaEn 2023* (pp. 24–28). Institute of Electrical and Electronics Engineers Inc.  
<https://doi.org/10.1109/CyMaEn57228.2023.10051026>
- Ahmad, A., Dajani, D., & Ali, N. (2023). Consumers' Adoption of E-Wallet Services in Jordan: Mediating Effect of Perceived Usefulness. In *Studies in Big Data* (Vol. 136, pp. 337–353). Springer Science and Business Media Deutschland GmbH.  
[https://doi.org/10.1007/978-3-031-42455-7\\_29](https://doi.org/10.1007/978-3-031-42455-7_29)
- Al-Qubati, S. A., & Al-Shaibany, N. A. (2024). Model of Secure E-Wallet Readiness. In A. S.A., A.-S. A.A., & A. M.N (Eds.), *1st International Conference on Emerging Technologies for Dependable Internet of Things, ICETI 2024*. Institute of Electrical and Electronics Engineers Inc.  
<https://doi.org/10.1109/ICETI63946.2024.10777208>
- Barua, M., & Deshpande, A. (2025). The Role of E-Wallets in Enhancing Business Operations and Consumer Satisfaction in the Unorganized Sector of Nagpur City. In *Journal of Neonatal Surgery* (Vol. 14, Issue 5, p. 140145). EL-MED-Pub. <https://doi.org/10.52783/jns.v14.2009>
- Basmantra, I. N., Paranegara, A. A. N. Y. V., & Candra, S. (2024). The Role of E-Wallet Use and Financial Literacy on Consumptive Behavior in Indonesia. In A. B & H. A (Eds.), *Lecture Notes in Networks and Systems: Vol. 923 LNNS* (pp. 346–356). Springer Science and Business Media Deutschland GmbH.  
[https://doi.org/10.1007/978-3-031-55911-2\\_33](https://doi.org/10.1007/978-3-031-55911-2_33)
- Che Nawi, N., Husin, H. S., Said Al-Jahwari, N., Zainuddin, S. A., Khan, N. U., Hassan, A. A., Wan Ibrahim, W. S. A. A., Mohamed, A. F., Mohd Nasir, N. S., & Muhamad Hasan, M. Z. (2024). The path to sustainability begins with going paperless: Antecedents of intention to use electronic wallet using serial mediation approach. In *Heliyon* (Vol. 10, Issue 2). Elsevier Ltd.  
<https://doi.org/10.1016/j.heliyon.2024.e24127>
- Firdaus, T. M., & Lubis, M. (2022). Comparative Analysis of Popular Electronic Wallets in Indonesia in Daily Life Selection. In *ACM International Conference Proceeding Series* (pp. 362–368). Association for Computing Machinery.  
<https://doi.org/10.1145/3568834.3568865>
- Giggs, D. R., Hidayat, D., & Ferdianto. (2024). Gamification Impact on FinTech: Reward Mechanisms and Mission Engagement in Continuance Intention to use E-Wallet. *2024 International Conference on ICT for Smart Society (ICISS)*, 1–6.  
<https://doi.org/10.1109/iciss62896.2024.10751317>
- Huang, J., Chen, J., & Zhou, L. (2024). Motivation crowding effects on the intention for continued use of gamified fitness apps: A mixed-methods approach. *Frontiers in Psychology*, 14.  
<https://doi.org/10.3389/fpsyg.2023.1286463>
- Izzah, N., Mohamed, M., Dilaila, F., Fathiah, S. N., & Amelda, F. S. (2022). E-Wallet Awareness: The Expansion of Knowledge in Rural Area in Terengganu Malaysia Due to Coronavirus. In A.-E. M, A.-S. M.A, A.-K. M.N, & S. K (Eds.), *Lecture Notes in Networks and Systems* (Vol. 322, pp. 931–943). Springer Science and Business Media Deutschland GmbH.  
[https://doi.org/10.1007/978-3-030-85990-9\\_74](https://doi.org/10.1007/978-3-030-85990-9_74)
- Jamaludin, N. A., Zaki, H. O., Ramli, R. Md., & Suffarruddin, S. H. (2024). Towards a Sustainable Financial Future: Exploring the Influence of E-Wallet Adoption Among Gen Z in Malaysia. In *Institutions and Economies* (Vol. 16, Issue 4, pp. 113–138). Faculty of Economics and Administration.  
<https://doi.org/10.22452/IJIE.vol16no4.4>
- Katini, K., Amalanathan, S., & Hriizhiinio, K. (2023). Can mobile wallet usage contribute towards environmental sustainability? Evidence from a moderated mediation approach. In *Universal Access in the Information Society*. Springer Science and Business Media Deutschland GmbH.  
<https://doi.org/10.1007/s10209-023-01027-5>
- Kımsı, F., & Tanova, C. (2022). Can I Trust My Phone to Replace My Wallet? The Determinants of E-Wallet Adoption in North Cyprus. In *Journal of Theoretical and Applied Electronic Commerce Research* (Vol. 17, Issue 4, pp. 1696–1715). MDPI.  
<https://doi.org/10.3390/jtaer17040086>
- Kumar, A., Haldar, P., & Chaturvedi, S. (2025). Factors influencing intention to continue use of e-wallet: Mediating role of perceived usefulness. *Vilakshan - XIMB Journal of Management*, 22(1), 45–61.  
<https://doi.org/10.1108/xjm-12-2023-0243>
- Libaque-Saenz, C. F., Ortega, C., Rodriguez-Serra, M., Chong, M., & Lopez-Puente-de-la-Vega, S. (2024). The role of interoperability and inter-side benefits on merchants' e-wallet adoption: The case of Peruvian nanostores. In *Industrial*

- Management and Data Systems* (Vol. 124, Issue 1, pp. 64–84). Emerald Publishing.  
<https://doi.org/10.1108/IMDS-04-2023-0238>
- Nurcahyo, R., Prabuwo, A. S., Fainusa, A. F., Wibowo, N., Habiburrahman, M., & Hindriyandhito, K. (2023). *Human Behavior and Emerging Technologies—2023—Nurcahyo—Enhancing User Satisfaction in Indonesia's e-wallet Market A.pdf*.
- Omodero, C. O. (2021). Fintech Innovation in the Financial Sector: Influence of E-Money Products on a Growing Economy. In *Studia Universitatis Vasile Goldis Arad, Economics Series* (Vol. 31, Issue 4, pp. 40–53). De Gruyter Open Ltd. <https://doi.org/10.2478/sues-2021-0018>
- Permatasari, M. I., & Kartawinata, B. R. (2021). The Effect of Perceived Ease, Benefit, and Security on Interest in Using Ovo Fintech Application in Indonesia. In B. S, S. D, V. V, S. R.R.K, & A. A (Eds.), *Proceedings of the International Conference on Industrial Engineering and Operations Management* (pp. 878–885). IEOM Society.  
<https://www.scopus.com/inward/record.uri?eid=2-s2.0-85125911386&partnerID=40&md5=2c7298b71a2f55f2d75edf3025215e87>
- Rahman, S. U., Nguyen-Viet, B., Nguyen, Y. T. H., & Kamran, S. (2024). Promoting fintech: Driving developing country consumers' mobile wallet use through gamification and trust. *International Journal of Bank Marketing*, 42(5), 841–869. <https://doi.org/10.1108/ijbm-01-2023-0033>
- Shetu, S. N., Islam, Md. M., & Promi, S. I. (2022). An Empirical Investigation of the Continued Usage Intention of Digital Wallets: The Moderating Role of Perceived Technological Innovativeness. *Future Business Journal*, 8(1). <https://doi.org/10.1186/s43093-022-00158-0>
- Shukri, A. F. M., Leong, T. P., Rashid, A. A., & Hanif, A. (2024). The Moderating Role of Structural Assurance in the Unified Theory of Acceptance and Use of Technology (UTAUT): A Study of E-wallet Behavioural Intention of Users and Non-users Among Adults in Malaysia. In *Malaysian Journal of Consumer and Family Economics* (Vol. 33, pp. 490–503). Malaysian Consumer and Family Economics Association.  
<https://doi.org/10.60016/majcafe.v33.18>
- Soodan, V., & Rana, A. (2020). Modeling customers' intention to use e-wallet in a developing nation: Extending UTAUT2 with security, privacy and savings. In *Journal of Electronic Commerce in Organizations* (Vol. 18, Issue 1, pp. 89–114). IGI Global.  
<https://doi.org/10.4018/JECO.2020010105>
- Subaramaniam, K., Kolandaisamy, R., Jalil, A. B., & Kolandaisamy, I. (2020). The impact of E-Wallets for current generation. In *Journal of Advanced Research in Dynamical and Control Systems* (Vol. 12, Issue 1 Special Issue, pp. 751–759). Institute of Advanced Scientific Research, Inc.  
<https://doi.org/10.5373/JARDCS/V12SP1/20201126>
- Yann, J. W. C., Saeedi, M., & Meskaran, F. (2019). A literature review on factors influencing intention to adopt e-wallet. In *Journal of Advanced Research in Dynamical and Control Systems* (Vol. 11, Issue 11 Special Issue, pp. 895–903). Institute of Advanced Scientific Research, Inc.  
<https://doi.org/10.5373/JARDCS/V11SP11/20193113>