Available online at: http://journals.researchsynergypress.com/index.php/aqa
Applied Quantitative Analysis (AQA)
ISSN 2808-4934
Volume 1 Number 1 (2021): 33-52

External Drivers of E-Wallet Continuance and Loyalty Among Mid-to-Late Adulthood Consumers in Indonesia

Widyoretno Adiani[1*]
[1] Bandung Institute of Technology, Indonesia

Abstract

The rapid growth of digital payments in Southeast Asia, particularly Indonesia, has transformed financial behaviors, yet significant adoption and usage gaps remain among mid-to-late adulthood consumers. This study investigates the determinants of e-wallet continuance usage and loyalty within this mid-to-late adulthood segment in Indonesia, here referring to individuals aged 40 years and above, a demographic increasingly important to the nation's digital economy. Drawing on Expectation Confirmation Theory and supported by insights from technology adoption and institutional perspectives, the research examines the influence of government support, social influence, and network externalities on continuance usage, and the role of continuance usage in shaping loyalty. Using a quantitative, cross-sectional design, data were collected from 223 e-wallet users within the targeted age segment and analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The findings show that government support and social influence positively predict continuance usage, underscoring the importance of institutional legitimacy and interpersonal cues in reinforcing digital payment engagement among mid-to-late adulthood consumers. In contrast, network externalities do not significantly influence continuance usage, suggesting that market-wide adoption cues play a limited role for this demographic. The results also confirm that continuance usage strongly predicts loyalty, highlighting the importance of sustained user experience in fostering long-term commitment to e-wallet platforms. Collectively, these insights offer theoretical contributions to fintech continuance literature and practical implications for strengthening digital inclusion and user retention among older consumers.

Keywords: *E-Wallet, Mid-to-Late Adulthood Consumers, Government Support, Network Externalities, Social Influence, Loyalty, Digital Financial Transformation*

INTRODUCTION

The digital payment revolution across Southeast Asia has accelerated rapidly, reshaping how consumers conduct financial transactions and engage with the emerging cashless economy. According to Asean Learning Center (2020), almost 70% of consumers in Southeast Asia went digital in 2020, a rapid growth driven by the COVID-19 pandemic (Aji et al., 2020). Nevertheless, despite overall growth, a substantial adoption and usage gap persists among mid-to-late adulthood consumers, those who are aged 40 years and above. Although younger consumers constitute the largest share of e-wallet adopters, mid-to-late adulthood consumers possess higher purchasing power and exhibit stronger potential for long-term loyalty, positioning them as a

Corresponding author
Widyoretno Adiani, widyoretno_adiani@sbm-itb.ac.id
DOI: 10.31098/quant.3991

strategically important yet insufficiently understood segment in sustaining e-wallet growth (Leong et al., 2020; Moorthy et al., 2017).

Evidence from Deloitte (2020) highlights that this age group differs markedly from younger adults in their patterns of digital adoption, risk perception, and technology adaptability. Prior studies consistently show that older adults face higher technology anxiety, greater security concerns, and difficulty assessing the value of digital payment tools (Chen & Chan, 2014). In Indonesia, as one of the fastest-growing e-wallet markets in Asia, this demographic group remains the most vulnerable to digital financial exclusion and is more likely to discontinue usage after initial adoption, making continuity of usage a more critical challenge than adoption itself.

This issue persists even amid substantial national efforts to accelerate digital payments (Bank Indonesia, 2020). Many older users still struggle to perceive clear value without adequate social cues, institutional reassurance, or supportive environments that reduce uncertainty. Prior research suggests that social influence facilitates trust, government support enhances legitimacy, and network externalities increase perceived convenience, mechanisms that are especially crucial for sustaining continued usage and loyalty among older adults (Chen & Chan, 2014; Venkatesh et al., 2000). As competition intensifies among e-wallet providers, ensuring retention within this demographic has become increasingly important for Indonesia's broader digital transformation goals.

However, the academic literature does not adequately reflect this urgency. Most fintech and e-wallet studies, such as Wu and Chen (2017) and Wei et al. (2021), focus predominantly on younger users or include older adults only as a minority within broader demographic samples (Aji et al., 2020; Kumar et al., 2018; Singh et al., 2019). Consequently, existing findings offer limited generalizability to mid-to-late adulthood consumers, leaving gaps in understanding how structural, social, and market-driven factors shape their post-adoption behavior. This imbalance highlights the need for a more comprehensive framework that accounts for the psychosocial, institutional, and environmental forces influencing this segment.

To address this need, the present study draws on Expectation Confirmation Theory (ECT) and incorporates complementary insights from technology adoption and institutional perspectives to explain continuity and loyalty outcomes among older users. These theoretical lenses are particularly relevant, as older adults' post-adoption behaviors are shaped not only by individual evaluations but also by social influence, perceived market-wide convenience, and cues of institutional legitimacy. Guided by this theoretical foundation, the study investigates the determinants of continued e-wallet usage and loyalty among Indonesian consumers aged 40 years and above, focusing specifically on the roles of government support, network externalities, and social influence. Accordingly, the study addresses the following research questions:

1. How does government support influence the continued usage of e-wallets among adults aged 40 and above?
2. How do network externalities affect the continued usage of e-wallets?
3. How does social influence shape their continued usage of e-wallets?
4. How does continuance usage contribute to loyalty among mid-to-late adulthood consumers?

This study offers both theoretical and practical contributions. Theoretically, it extends the application of ECT to older digital consumers and incorporates structural and psychosocial

ISSN 2808-4934

antecedents, government legitimacy cues, network externality effects, and social influence mechanisms that remain underexplored in post-adoption fintech literature. Practically, the findings provide actionable insights for policymakers and e-wallet providers to design targeted interventions that promote digital inclusion, reduce discontinuation, and strengthen long-term loyalty among older users, contributing to national digital transformation priorities while enriching scholarly perspectives on fintech adoption across diverse age groups.

LITERATURE REVIEW

Theoretical Benchmark

Expectation Confirmation Theory (ECT)

Expectation Confirmation Theory (ECT) was introduced by Oliver (1980) to explain how consumers' expectations, perceived performance, and satisfaction shape repurchase decisions. In the information systems domain, Bhattacherjee (2001) extended ECT to technology continuance, demonstrating that continued use is driven by satisfaction and perceived usefulness formed through prior experience. ECT's emphasis on experience-based evaluations rather than initial perceptions makes it a robust foundation for examining post-adoption behavior and supports the incorporation of contextual antecedents that may influence satisfaction, confirmation, or continuance.

ECT is particularly appropriate for this study, as the research focuses on continued e-wallet usage and loyalty, outcomes that ECT is specifically designed to explain. The theory offers a well-established mechanism linking users' assessments of their experiences to continuance intention and subsequent loyalty, while accommodating external factors such as government support, network externalities, and social influence as antecedents within the post-adoption process. These characteristics make ECT a suitable primary framework for examining sustained digital payment behavior among adults aged 40 years and above. ECT is especially relevant for mid-to-late adulthood consumers, whose continued use of digital payments is shaped by repeated evaluations of usefulness, trust, convenience, and risk reduction rather than enthusiasm for new features (Moorthy et al., 2017).

For this demographic group, continuance decisions are strongly influenced by whether their experiences confirm or disconfirm prior expectations (Bhattacherjee, 2001). Thus, ECT provides the most appropriate theoretical basis for understanding the post-adoption behavior and loyalty of older e-wallet users. While ECT captures the core cognitive mechanisms underlying continuance, it does not fully explain the social, market, and institutional forces that influence older adults' digital financial behavior. To develop a more comprehensive framework, this study incorporates three complementary theories that address these dimensions: UTAUT, Network Externality Theory, and Institutional Theory.

1. UTAUT (Unified Theory of Acceptance and Use of Technology)
   UTAUT provides critical insights into the social and environmental determinants of technology-use behavior (Venkatesh et al., 2003). Among its constructs, social influence is central to this study's model. Older adults typically rely more heavily on interpersonal cues, such as recommendations from family members, peers, or community networks, when navigating digital technologies. Social influence helps reduce uncertainty and strengthen

ISSN 2808-4934

confidence in digital systems, making it a key driver of continued usage for mid-to-late adulthood consumers. While ECT explains users' internal evaluative process, UTAUT complements it by clarifying how subjective norms and social expectations support or hinder sustained digital payment engagement (Acheampong et al., 2018).

2. Network Externality Theory
   Network Externality Theory (Katz & Shapiro, 1985; 1994) posits that the value of a technology increases as more users adopt it. In the context of e-wallets, widespread acceptance among consumers, merchants, and service providers enhances perceived convenience, reduces friction in daily transactions, and reinforces the utility of staying within the platform. For mid-to-late adulthood consumers, who prioritize simplicity, familiarity, and reliability, strong network effects can significantly lower perceived effort and risk (Huang et al., 2017). As the ecosystem surrounding e-wallets becomes more integrated and ubiquitous, older adults experience greater assurance and convenience, motivating continued usage.

3. Institutional Theory and Government Legitimacy Cues
   Institutional Theory posits that individual behavior is shaped by formal structures, regulatory pressures, and institutional norms (DiMaggio & Powell, 1983; Scott, 2008). For older adults, who demonstrate higher security concerns and lower digital confidence, government involvement plays a vital role in reducing perceived risk. Policies such as QRIS expansion, digital literacy campaigns, and consumer protection initiatives provide legitimacy cues that help older adults trust digital payments (Sánchez-Torres et al., 2017). By integrating Institutional Theory, the model acknowledges the impact of governmental support and regulatory assurance on continuance decisions.

Together, these theoretical perspectives provide a comprehensive foundation for understanding both the internal evaluative mechanisms and the external contextual factors that influence continued e-wallet usage among older adults. Accordingly, the integrated conceptual framework is presented in Figure 1, followed by a detailed development of the study's hypotheses in the subsequent subsection.

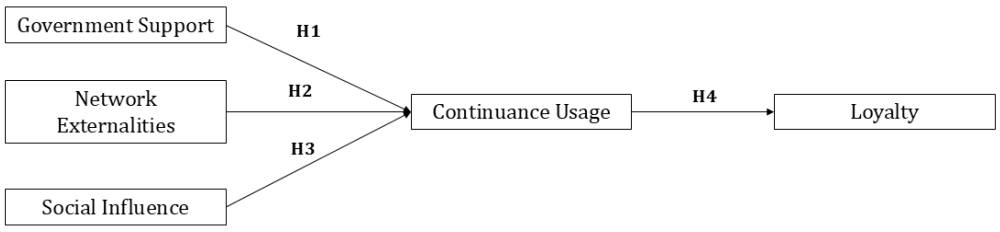

Figure 1. Research Framework

ISSN 2808-4934

Hypothesis Development

Government Support and Continuance Usage

According to DiMaggio and Powell (1983), Institutional Theory posits that individual behavior is shaped by regulatory structures, formal rules, and legitimacy cues provided by authoritative institutions (Scott, 2008). In the context of digital finance, government-driven initiatives, such as digital payment regulations, infrastructure standardization, financial consumer protection policies, and digital literacy campaigns, serve as external enablers that reduce uncertainty and perceived risks. Older adults, who typically exhibit higher technology anxiety and stronger risk sensitivity, rely more heavily on such institutional assurances compared to younger users.

A prior study by Chawla and Joshi (2019) highlights how government support signals that the technology is safe, trustworthy, and socially endorsed, thereby creating a legitimacy mechanism that encourages repeated use. When users perceive strong governmental backing, their confidence in the continuity of digital payment systems increases, fostering sustained engagement. Drawing upon the preceding explanation, the study posits the following hypothesis:

H1. Government support has a positive relationship with continuance usage of e-wallets among mid-to-late adulthood consumers

Network Externalities and Continuance Usage

Network Externality Theory asserts that the value of a technology increases as the number of users increases (Katz & Shapiro, 1985). In digital payment systems such as e-wallets, network effects emerge when widespread adoption enhances convenience, usability, and perceived benefits, creating a self-reinforcing cycle of increasing utility. When more merchants, peers, and institutions adopt e-wallets, users experience greater interoperability, more transaction opportunities, and reduced friction in everyday payment activities (Huang et al., 2017).

For older adults, who often rely on clear cues of usefulness and ease, the visibility of widespread usage can serve as a powerful motivator for continued engagement. When a consumer's social circle and local merchants increasingly adopt e-wallets, the technology becomes embedded in daily routines, enhancing perceived convenience and reducing the effort required to engage with cashless transactions. Prior research demonstrates that network externalities are a strong determinant of technology continuance, particularly in payment systems where seamless interactions depend on widespread adoption (Putri et al., 2020). Given these dynamics, network externalities are expected to significantly advance the likelihood that mid-to-late adulthood consumers continue using e-wallet services. Drawing upon the preceding explanation, the study posits the following hypothesis:

H2. Network externalities have a positive relationship with continuance usage of e-wallets among mid-to-late adulthood consumers

Social Influence and Continuance Usage

According to Smith et al. (2011), social influence refers to the degree to which individuals perceive that important others, such as family members, peers, or social groups, believe they should

ISSN 2808-4934

use a particular technology. In UTAUT, social influence is a core determinant of technology-use intention, reflecting the impact of subjective norms and interpersonal expectations on user behavior (Venkatesh et al., 2003). Although its effect is often modest among younger users, prior research demonstrates that social influence becomes substantially more influential among older adults, who rely more heavily on social approval and interpersonal guidance when engaging with digital technologies (Moorthy et al., 2017; Peek et al., 2016; Venkatesh et al., 2000).

In the context of e-wallet usage, social influence may help reduce uncertainty, increase trust, and validate perceived benefits; factors that are particularly important for mid-to-late adulthood consumers. Recommendations from family or peers, visible usage by one's social circle, and positive community norms can all serve as cues of legitimacy and safety, thereby strengthening confidence in continued e-wallet use (Kirmani & Roselina, 2017). Empirical studies in digital payment and mobile banking contexts similarly show that social influence significantly affects continued usage intentions when users have lower digital confidence or higher perceived risk. Drawing on UTAUT and prior empirical evidence, this study posits the following hypothesis:

H3. Social influence has a positive relationship with the continuance usage of e-wallets among mid-to-late adulthood consumers

Continuance Usage and Loyalty

Expectation Confirmation Theory (ECT) posits that continuance usage reflects a user's repeated engagement, driven by confirmation of expectations and satisfaction with prior experiences (Oliver, 1980; Bhattacherjee, 2001). Over time, sustained usage can transform from a deliberate decision into a stable behavioral pattern, reinforcing the user's familiarity, comfort, and confidence with the technology. In the context of e-wallets, continued use signals trust in the system's performance, perceived convenience, and alignment with users' needs.

For mid-to-late adulthood consumers who value reliability and consistency, continuance usage is particularly influential in shaping loyalty (Abu-Alhaija et al., 2018). When older adult users repeatedly use an e-wallet, they are more likely to develop habit-like behaviors and emotional attachments, reducing their likelihood of switching to alternative platforms. This aligns with ECT-based IS continuance research, which consistently demonstrates that continuance intention and actual continued use are strong predictors of loyalty outcomes, including commitment, preference stability, and reduced churn (Fianto et al., 2020; King & He, 2006). Drawing upon the preceding explanation, the study posits the following hypothesis:

H4. Continuance usage has a positive relationship with loyalty to e-wallets among mid-to-late adulthood consumers

RESEARCH METHOD

Research Design

This study adopts a quantitative, cross-sectional research design situated within the positivist paradigm (Saunders et al., 2019). Although continuance behavior develops over time, a cross-sectional design is appropriate because the study aims to capture users' existing perceptions and behavioral intentions at a specific point within Indonesia's rapidly evolving digital payment

ISSN 2808-4934

environment. This approach is widely used in fintech continuance studies where longitudinal tracking is impractical due to user mobility, platform switching, and market volatility.

The selection of a quantitative approach was based on the study's objective to understand the current issues surrounding e-wallet usage, specifically continuance usage and customer loyalty, using a broad, generalizable perspective. By employing a survey strategy, this study enables systematic measurement of perceptions across a large group of users, ensuring numerical precision, replicability, and suitability for variance-based modeling.

Population and Sample

The population of this study comprises Indonesian e-wallet users aged 40 years and above. Indonesia provides a particularly relevant context for examining e-wallet consumption behavior, given the country's rapid annual growth in digital payment adoption and strong government initiatives supporting e-wallet use in everyday transactions (Aji et al., 2020; Soriano et al., 2020). The selection of 40 years old as the lower age boundary was based on theoretical and practical considerations regarding the adaptability of technology in mid-adulthood, where individuals aged 35 to 39 remain highly active in adopting fintech services, with adoption speed and openness to new technological features comparable to those of younger adult groups (Seifert et al., 2020). However, after the age of 40, prior studies, such as those by van Dijk (2019), have shown that adoption speed and adaptability begin to decline more noticeably. Industry observations consistently identify the 40+ age group as the point at which behavioral differences in technology adoption become significantly more pronounced (Berkowsky et al., 2018; Neves & Mead, 2020). This pattern aligns with Knowles' (1984) description of mid-adulthood as a stage in which adaptation to new technologies begins to shift, and the age group is often classified as digital immigrants in public discourse. Fintech adoption studies in Southeast Asia consistently report a marked decline in digital payment adoption and adaptability after the age of 40 (UOB Group, 2021). This demographic threshold, therefore, represents a meaningful behavioral boundary for defining mid- to late adopters of e-wallets in Indonesia.

To qualify for participation, respondents only needed to have used at least one e-wallet at some point, without any requirements regarding specific brands, the number of platforms used, or the length of usage. Considering the need to specifically reach individuals aged 40 years and above and the practicality of gathering respondents spread across different Indonesian provinces, this study utilized a non-probability purposive sampling technique. Purposive sampling was selected because it aligns with the research objective of targeting a group defined by specific behavioral and demographic characteristics (Saunders et al., 2019).

Following Hair et al. (2019), the minimum required sample size in PLS-SEM should be determined by the construct with the greatest number of predictors. In this study, the largest number of predictors pointing to a single endogenous construct is three. Accordingly, a G*Power analysis was conducted using three predictors, a medium effect size ($f^2 = 0.15$), a power level of 0.80, and a significance level of 0.05 (Faul et al., 2009). G*Power's calculation of 77 respondents therefore provides a valid minimum threshold, and the actual sample of 223 participants exceeds this requirement comfortably, with valid responses from a variety of provinces and demographic backgrounds, providing more than sufficient statistical power for PLS-SEM analysis. Additional demographic details are presented in Table 1 in the subsequent section.

ISSN 2808-4934

Data Collection Procedure

Data collection was conducted using an online questionnaire created through Google Forms. This method was chosen to ensure accessibility for respondents within the targeted age group, who frequently use digital communication platforms. The survey link was distributed through Civitas email networks, WhatsApp groups, and social media channels such as Facebook and Instagram. These platforms were deliberately selected because they represent common communication environments for Indonesian users aged 40 years and above. Before completing the questionnaire, respondents were provided with information about the study's purpose, the confidentiality of their responses, and the ethical considerations governing their participation. Participants were informed that their data would be used exclusively for research purposes and that no personal information would be shared outside the research context. They were required to provide informed consent by selecting the option agreeing to participate before proceeding to the questionnaire. Only fully completed responses were included, as the system automatically excluded incomplete submissions.

Research Instrument

The questionnaire was developed by adapting measurement items from established scales used in previous studies. Government Support was measured using three items adapted from Aji et al. (2020), Social Influence was adapted from Wei et al. (2021), and Network Externalities was adapted from Song et al. (2009). Whereas Loyalty items were adapted from Zhou and Lu (2011), and Continuance Usage items from Bhattacherjee (2001). All items were originally presented in the Indonesian language for data collection and subsequently translated back into English for academic reporting. Care was taken to ensure conceptual equivalence during the translation process.

Respondents rated their agreement with each statement on a 6-point Likert scale from 1 (strongly disagree) to 6 (strongly agree). An even-numbered Likert scale was used to prevent respondents from choosing a neutral midpoint, thereby encouraging them to indicate a definite level of agreement or disagreement. This approach also helps reduce midpoint bias, which is frequently observed in collectivistic cultures such as Indonesia (Chyung et al., 2017). By prompting respondents to take a clear evaluative position, the scale enhances measurement sensitivity and provides sharper discrimination among responses, which is beneficial for PLS-SEM analysis.

A pilot test was conducted with 30 respondents to assess reliability and validity. The majority of the indicators returned satisfactory composite reliability values above 0.70 and average variance extracted (AVE) values above 0.50, as recommended by Hair et al. (2019). However, during the pilot test, one item from the Network Externalities construct, NE1 ("Many of my friends and relations frequently use the e-wallet"), demonstrated inadequate reliability and validity. Consistent with Sarstedt et al. (2017), the item was removed from the final instrument. Beyond its low loading, NE1 also showed conceptual overlap with the Social Influence construct, posing a risk of construct contamination. Removing the item, therefore, enhanced both the conceptual clarity and the overall measurement precision of the construct.

Data Analysis Technique

Data analysis was conducted using descriptive statistics in Microsoft Excel, followed by Partial Least Squares Structural Equation Modeling (PLS-SEM). PLS-SEM was chosen because it is

ISSN 2808-4934

well-suited to analyzing complex models with multiple latent constructs and potential mediating effects, while prioritizing predictive accuracy. This method aligns with the quantitative, positivist orientation of the study, as it supports prediction-focused analysis and effectively accommodates intricate conceptual frameworks involving numerous latent variables and structural relationships (Hair et al., 2019). Its strengths also make it appropriate for extending theoretical models to real-world settings, such as examining consumer behavior in the context of e-wallet usage.

In this study, the analysis was carried out in two primary stages, beginning with measurement model assessment and followed by structural model assessment. Measurement model evaluation included examining indicator loadings, internal consistency reliability through composite reliability, convergent validity through the average variance extracted (AVE), and discriminant validity using Fornell–Larcker criterion. Structural model assessment involved evaluating path coefficients and their significance using bootstrapping. These procedures collectively ensured that both the measurement and structural components of the model met established methodological standards and that the findings were statistically valid and theoretically meaningful.

FINDINGS AND DISCUSSION

To contextualize the empirical analysis, Table 1 summarizes the respondents' demographic characteristics. The sample is predominantly composed of individuals residing on Java Island, particularly from West Java, Jabodetabek, East Java, Central Java, the Special Region of Yogyakarta, and Banten, representing the majority compared to respondents from other regions. Most participants hold a Bachelor's or Applied Bachelor's degree and are employed in the private sector or state-owned enterprises. The largest proportion of respondents reports a monthly income exceeding Rp 10,000,000. Building on this profile, Table 2 presents the descriptive statistics for all measurement indicators used in the study.

Table 1. Respondent Demographic (n=226)

Respondent Demographic		**Total**
Gender	Male	103
	Female	123
Province of Residence	North Sumatra	5
	West Sumatra	1
	South Sumatra	5
	West Sulawesi	2
	Riau Archipelago	2
	East Java	24
	Central Java	14
	West Java	82
	Jabodetabek (Jakarta, Bogor, Depok, Tangerang, Bekasi)	72
	Special Region of Yogyakarta	10
	Banten	4

ISSN 2808-4934

Respondent Demographic		Total
	Bali	4
Education	Elementary/Junior High/Senior High School	8
	Diploma Level 1/2/3	31
	Bachelor's Degree/Applied Bachelor's Degree	149
	Master's Degree	37
	Doctoral Degree	1
Occupation	Educators/Teaching Personnel	12
	Healthcare Professionals	17
	Retirees	1
	Entrepreneurs	42
	Students	1
	Administrative Staff	1
	Civil Servants	12
	Private-Sector/State-Owned Enterprise Employees	94
	Housewife	46
Monthly Income	<Rp 1.000.000	1
	Rp 1.000.001 - Rp 4.000.000	5
	Rp 4.000.001 - Rp 7.000.000	49
	Rp 7.000.001 - Rp 10.000.000	67
	> Rp 10.000.000	104

Table 2. Descriptive Statistics Result

Indicators	Mean	Standard Deviation	Min	Max
NE2. At present, e-wallets can be used for a wide variety of payments	5.840	0.372	4	6
NE3. It is very easy for me to find merchants, both offline and online, that support e-wallet transactions	5.703	0.444	4	6
SI1. My friends and family influence me to use e-wallets	5.502	0.706	1	6
SI2. Social media influencers or public figures whom I follow influence my decision to use e-wallets	3.824	1.344	1	6
SI3. Using an e-wallet increases my confidence	5.024	0.910	1	6
GS1. Clear and strict government regulations regarding e-wallet services strengthen my trust in using existing e-wallet platforms	5.842	0.527	1	6

ISSN 2808-4934

Indicators	Mean	Standard Deviation	Min	Max
GS2. The ability to pay for various government-related services through e-wallets makes payments more efficient and increases my interest in using e-wallets	5.104	0.852	1	6
GS3. Government support and policies encourage a wide range of offline and online merchants to adopt e-wallet payment options	5.914	0.399	1	6
CU1. I will continue using e-wallets in the future	5.720	0.528	2	6
CU2. I intend to keep using e-wallets rather than other non-cash payment methods	5.184	0.677	3	6
CU3. If possible, I would like to continue using e-wallets	5.801	0.487	2	6
L1. I will consider using e-wallets as my primary option for future transactions	5.120	0.733	2	6
L2. I will recommend e-wallet services to others	5.712	0.585	2	6
L3. I will consider using e-wallets as my primary choice for non-cash payments	5.088	0.788	1	6

Note: 1=Strongly Disagree, 2=Disagree, 3=Slightly Disagree, 4=Slightly Agree, 5=Agree, 6=Strongly Agree

According to Table 3, the Composite Reliability (CR) values across all constructs range from 0.758 to 0.851, exceeding the recommended threshold of 0.70 for internal consistency reliability (Hair et al., 2017; 2019). These values indicate that the indicators consistently measure their respective latent variables and demonstrate satisfactory internal coherence. Furthermore, the Average Variance Extracted (AVE) values range from 0.513 to 0.659, all of which exceed the 0.50 benchmark recommended by Fornell and Larcker (1981). An AVE value above 0.50 indicates that each construct explains more than half of the variance of its indicators, signifying acceptable convergent validity (Fornell & Larcker, 1981; Chin, 1998). Therefore, all constructs in the model meet the criteria for convergent validity, confirming that the indicators are empirically representative of their underlying constructs.

Table 3. Reliability and Validity Result

Variable	Composite Reliability	AVE
Network Externalities	0.758	0.625
Social Influence	0.759	0.513
Government Support	0.831	0.638
Continuance Usage	0.851	0.659
Loyalty	0.824	0.613

ISSN 2808-4934

According to Fornell and Larcker (1981), the Fornell–Larcker criterion states that a construct should share more variance with its indicators than with other constructs in the model. This is satisfied when the square root of AVE (represented on the diagonal) is greater than the construct's correlations with other constructs. In Table 4, each construct's diagonal value (e.g., Continuance Usage = 0.812; Government Support = 0.799) is higher than all its correlations with the other constructs. This indicates that each latent variable is distinct from the others, thereby fulfilling the discriminant validity requirement. This result confirms that Social Influence, Government Support, Loyalty, Network Externalities, and Continuance Usage do not suffer from conceptual or empirical overlap.

Table 4. Discriminant Validity Assessment Using the Fornell–Larcker Criterion

	Continuance Usage	**Government Support**	**Loyalty**	**Social Influence**	**Network Externalities**
Continuance Usage	0.812				
Government Support	0.622	0.799			
Loyalty	0.688	0.558	0.783		
Social Influence	0.530	0.562	0.504	0.717	
Network Externalities	0.304	0.360	0.224	0.321	0.791

As presented in Table 5, the inner VIF values range from 1.000 to 1.543, which are well below the recommended thresholds of 5.0 (Hair et al., 2017). These values indicate the absence of collinearity among the predictor constructs. This means that Government Support, Social Influence, Network Externalities, and Loyalty do not exhibit problematic overlapping variance when predicting their respective endogenous variables. Low VIF values confirm that the model estimates are stable and reliable and that path coefficients are not inflated by multicollinearity.

Table 5. Collinearity Assessment Using Inner VIF Values

	VIF
Government Support -> Loyalty	1.543
Loyalty -> Continuance Usage	1.000
Social Influence -> Loyalty	1.498
Network Externalities -> Loyalty	1.177

As shown in Table 6, the structural model results indicate that government support has a significant positive effect on continuance usage ($\beta = 0.279$, $t = 3.093$, $p = 0.002$), suggesting that institutional reinforcement and regulatory assurance meaningfully encourage older adults to continue using e-wallet services. Social influence also demonstrates a significant positive relationship with continuance usage ($\beta = 0.193$, $t = 3.734$, $p < 0.001$), indicating that interpersonal norms and recommendations from important others contribute to sustained engagement with e-wallets among mid-to-late adulthood consumers. In contrast, network externalities exhibit a

ISSN 2808-4934

negligible and non-significant effect on continuance usage (β = –0.008, t = 0.166, p = 0.868), implying that the broader ecosystem adoption or perceived ubiquity of e-wallet usage does not meaningfully shape continued use in this demographic. Finally, continuance usage strongly predicts loyalty (β = 0.688, t = 8.288, p < 0.001), reinforcing the theoretical expectation that sustained usage behaviors translate into stronger commitment and long-term preference for e-wallet services.

Table 6. Hypothesis Testing

	Coefficient	T statistics (|O/STDEV|)	P values
Government Support -> Continuance Usage	0.279	3.093	0.002*
Social Influence -> Continuance Usage	0.193	3.734	0.000*
Network Externalities -> Continuance Usage	-0.008	0.166	0.868
Continuance Usage -> Loyalty	0.688	8.288	0.000*

**significant at p<0.05, t-statistic>1.96*

According to Table 7, the R^2 value for Continuance Usage is 0.473, indicating that Government Support, Social Influence, Network Externalities, and Loyalty collectively explain 47.3% of the variance in this construct. In social science research, where human behavior is shaped by a wide range of external influences that are often uncontrollable, Chin (1998) suggests that R^2 values of 0.67, 0.33, and 0.19 may be considered substantial, moderate, and weak, respectively. Falk and Miller (1992) further emphasize that an R^2 of at least 0.10 is acceptable in studies involving complex behavioral phenomena or diverse populations. When benchmarked against these guidelines, the R^2 value obtained for Continuance Usage reflects a moderate to substantial level of explanatory power, demonstrating strong predictive relevance for the model. Similarly, the R^2 value for Loyalty is 0.365, indicating that Continuance Usage explains 36.5% of the variance in Loyalty. Since Continuance Usage is the sole predictor of Loyalty in the structural model, this value reflects its moderate contribution to loyalty formation among mid-to-late adulthood e-wallet users.

Table 7. R-Square Values

	R-square	R-square adjusted
Continuance Usage	0.473	0.471
Loyalty	0.365	0.359

Discussion

Rapid growth in e-wallet adoption across Indonesia has not been matched by an equally deep understanding of mid-to-late adulthood consumers, a segment that remains underexamined despite its increasing relevance and purchasing power. Addressing this gap, the present study investigated how three key external influences, government support, social influence, and network

ISSN 2808-4934

externalities, shape the continuance usage of e-wallets among adults aged 40 and above, and how continued usage subsequently fosters loyalty.

Upon completing data collection and conducting the analysis, the findings provide a clear narrative of how external contexts shape post-adoption behavior. First, government support demonstrates a significant positive effect on continuance usage, supporting H1 ($\beta = 0.279$, $t = 3.093$, $p = 0.002$). This result affirms the pivotal role of institutional reinforcement in stabilizing technology use among older adults. Regulatory oversight, QRIS standardization, and consumer protection mechanisms function as legitimacy cues that reduce perceived risk and strengthen confidence in e-wallet systems. Such institutional assurances are especially influential for mid-to-late adulthood users, who tend to exhibit higher risk aversion and rely on external authorities to validate the safety and reliability of digital services, consistent with prior research on aging and technology engagement (Peek et al., 2016).

Social influence also emerges as a significant determinant of continuance usage, confirming H3 ($\beta = 0.193$, $t = 3.734$, $p < 0.001$). This finding indicates that interpersonal and normative cues from family members, peers, and broader social networks remain powerful motivators of continued digital payment use among older adults. Research on aging and ICT adoption suggests that this demographic places considerable weight on social validation and trusted recommendations when evaluating technology (Moorthy et al., 2017; Venkatesh et al., 2000). In collectivistic contexts such as Indonesia, where community norms strongly shape behavioral expectations, social reinforcement becomes even more salient. Older adults often depend on socially embedded learning processes, including family assistance, collaborative problem-solving, and community familiarity, which collectively reduce cognitive load and promote habitual use (Luijkx et al., 2015). These results underscore how embedded social environments help sustain continued e-wallet usage for this demographic.

In contrast, network externalities exert no significant influence on continuance usage, leading to the rejection of H2 ($\beta = -0.008$, $t = 0.166$, $p = 0.868$). Although network size and market-level adoption often stimulate early adoption (Qasim & Abu-Shanab, 2016), these mechanisms appear less relevant once older users achieve confidence and familiarity with a platform. Their evaluations shift toward internal factors, such as trust, reliability, and convenience, rather than the number of other users (Tyler et al., 2020; Portz et al., 2019). While broad merchant coverage and service integration (e.g., utility payments) remain important, these elements are primarily shaped by institutional policy rather than peer usage alone. Thus, network externalities in isolation do not substantially motivate continued participation for this age group.

Finally, continuance usage strongly predicts loyalty, supporting H4 ($\beta = 0.688$, $t = 8.288$, $p < 0.001$). This relationship represents the most substantial effect in the model, demonstrating that consistent use serves as the foundation for long-term commitment among older consumers. The finding aligns with Expectation Confirmation Theory, which holds that repeated satisfactory experiences foster positive attitudes, habit formation, and enduring loyalty (Bhattacherjee, 2001; Oliver, 1980). For mid-to-late adulthood users, prolonged engagement reinforces feelings of trust, reduces perceived complexity, and increases emotional attachment to the platform (Dai et al., 2018).

Collectively, these results illustrate that institutional and interpersonal forces, rather than market-level dynamics, are the primary drivers of long-term e-wallet engagement among mid-to-

ISSN 2808-4934

late adulthood consumers. The study enriches theoretical understanding of technology continuance in older populations and offers actionable insights for policymakers and fintech providers seeking to enhance digital inclusion and strengthen retention within this expanding demographic group.

CONCLUSION

This study examined the drivers of e-wallet continuance usage and loyalty among Indonesian consumers aged 40 years and above. By incorporating government support, social influence, network externalities, loyalty, and continuance usage into a PLS-SEM framework, the research contributes to a clearer understanding of digital financial behavior among a demographic increasingly central to Indonesia's digital economy. The findings show that government support plays a significant role in strengthening continuance usage, highlighting the importance of institutional initiatives in reducing perceived risk and reinforcing trust among older users. Social influence likewise emerges as a meaningful factor, indicating that interpersonal encouragement and normative expectations continue to shape technology-related decisions in mid-to-late adulthood.

In contrast, network externalities do not significantly influence continuance usage among mid-to-late adulthood consumers. This suggests that once individuals in this age group become familiar with an e-wallet platform, their decisions to continue using it depend more on personal comfort, trust, and the reliability of their own experiences than on how widely the platform is used by others. The absence of a significant effect also indicates that external popularity cues or the size of the user base play a limited role for older adults, who tend to prioritize consistency, safety, and supportive social or institutional environments when maintaining digital payment behaviors. Finally, loyalty is found to positively impact continued usage, emphasizing the importance of attitudinal commitment and satisfaction in sustaining long-term engagement with e-wallet platforms. Overall, the study demonstrates that institutional assurance, social support, and user loyalty are key to fostering enduring digital payment behaviors among older adults, with implications for both theory and practice in the expanding fintech ecosystem.

Theoretical Implication

The study contributes to the technology adoption and post-adoption literature by offering new insights into the behavior of mid-to-late adult digital users, an age group that is understudied in fintech research. The findings affirm key elements from Expectation-Confirmation Theory and post-adoption behavioral frameworks by demonstrating the strong role of continuance usage in predicting loyalty. Additionally, the study refines existing theoretical assumptions by showing that network externalities, which are often influential among younger cohorts, are less relevant to older users. This adds nuance to theoretical models by emphasizing age-related behavioral differences in digital financial contexts. Furthermore, the significant role of government support extends the understanding of external enabling conditions within post-adoption behavior, highlighting the importance of institutional assurance in reducing uncertainty and enhancing trust among older digital consumers.

ISSN 2808-4934

Practical Implication

From a practical standpoint, the findings offer valuable guidance for policymakers, fintech providers, and industry stakeholders. Given the strong influence of government support on continuance usage, policymakers should continue amplifying incentives, regulatory transparency, and educational campaigns to enhance digital trust among older adults. Fintech companies should align product design and communication strategies with these governmental initiatives to reinforce user confidence. The non-significance of network externalities indicates that marketing strategies centered on peer usage size may be less effective for this demographic. Instead, providers should prioritize improving service reliability, ease of use, security assurances, and customer support tailored to older users' needs. The substantial effect of continuance usage on loyalty emphasizes the need for fintech firms to invest in retention strategies, including personalized features, simplified interfaces, and reward programs that acknowledge long-term users. In addition, the significant role of social influence suggests that campaigns targeting family networks, community groups, and trusted peer circles can further encourage adoption and sustained use among adults aged 40 and above.

LIMITATION & FURTHER RESEARCH

Although this study provides valuable theoretical and practical insights into e-wallet continuance behavior among mid-to-late adulthood consumers in Indonesia, several limitations warrant consideration to contextualize the findings and inform future research directions. The first limitation concerns the geographic distribution of respondents. The sample is heavily concentrated in Java, Indonesia's most economically advanced and digitally connected region, where internet infrastructure, fintech penetration, and exposure to digital payment ecosystems are considerably stronger than in other parts of the country. As a result, respondents from Java may exhibit higher digital literacy, greater familiarity with e-wallet functionalities, and more established usage habits. This regional concentration may lead to an overestimation of continuance tendencies or loyalty patterns. Future research should therefore include more geographically diverse participants, particularly from Kalimantan, Sulawesi, Papua, and rural areas, to more accurately capture regional variations in digital inclusion and infrastructural disparities.

A second limitation relates to the educational composition of the sample, which is dominated by respondents with Bachelor's-level qualifications. Although technology adoption among adults is shaped by multiple psychological and contextual factors, higher levels of education typically correlate with greater digital competence and openness toward technological innovation. The underrepresentation of individuals with lower educational attainment may bias the findings toward more favorable evaluations of e-wallet usage. Future studies should aim for a more balanced educational distribution or conduct targeted sampling across specific educational strata to better understand the barriers and motivations of less digitally skilled users.

A third limitation pertains to the nonsignificant effect of network externalities on continuance usage. While this outcome may reflect distinct behavioral tendencies among older consumers, who may prioritize stable personal experience and institutional reassurance over peer or market-wide adoption, it may also indicate the need to refine how network externalities are operationalized. Future research could examine alternative dimensions such as perceived platform

ISSN 2808-4934

ubiquity, breadth of merchant acceptance, or community-level adoption patterns to assess whether these components exert more influence in other demographic or contextual settings.

Future studies could further extend this work by incorporating additional post-adoption variables relevant to older adults, including perceived security, habit formation, or digital self-efficacy, which may offer richer explanatory power. Longitudinal research designs would also provide deeper insight into how continuance and loyalty evolve over time as users gain experience and as digital payment ecosystems mature. Comparative studies across age groups or across different national markets may offer an even more comprehensive understanding of how demographic, cultural, and infrastructural factors moderate the determinants of e-wallet continuance behavior.

REFERENCES

Abu-Alhaija, A. S., Nerina, R., Yusof, R., Hashim, H., & Jaharuddin, N. S. (2018). Determinants of customer loyalty: A review and future directions. *Australian Journal of Basic and Applied Sciences, 12*(7), 106–111. https://doi.org/10.22587/ajbas.2018.12.7.17

Acheampong, P., Zhiwen, L., Hiran, K. K., Serwaa, O. E., Boateng, F., & Bediako, I. A. (2018). Examining the intervening role of age and gender on mobile payment acceptance in Ghana: UTAUT model. *Canadian Journal of Applied Science and Technology, 6*(1), 141–151.

Aji, H. M., Berakon, I., & Md Husin, M. (2020). COVID-19 and e-wallet usage intention: A multigroup analysis between Indonesia and Malaysia. *Cogent Business & Management, 7*(1), 1804181. https://doi.org/10.1080/23311975.2020.1804181

Asean Learning Center. (2020). *E-wallet adoption on the rise in ASEAN.* https://asean.dla.go.th/public/knowledgeArticle.do?cmd=article&category=2&nid=839&lang=en

Bank Indonesia. (2020). Ada virus corona, BI imbau masyarakat gunakan transaksi nontunai. *Kompas.* https://money.kompas.com/read/2020/03/24/182659926/ada-virus-corona-bi-imbau-masyarakat-gunakan-transaksi-nontunai

Berkowsky, R. W., Sharit, J., & Czaja, S. J. (2018). Factors predicting decisions about technology adoption among older adults. *Innovation in Aging, 2*(1), igy002. https://doi.org/10.1093/geroni/igy002

Bhattacherjee, A. (2001). Understanding information systems continuance: An expectation-confirmation model. *MIS Quarterly, 25*(3), 351–370.

Chawla, D., & Joshi, H. (2019). Consumer attitude and intention to adopt mobile wallet in India: An empirical study. *International Journal of Bank Marketing, 37*(7), 1590–1618. https://doi.org/10.1108/IJBM-09-2018-0256

Chen, K., & Chan, A. H. S. (2014). Gerontechnology acceptance by elderly Hong Kong Chinese: A senior technology acceptance model (STAM). *Ergonomics, 57*(5), 635–652. https://doi.org/10.1080/00140139.2014.895855

Chin, W. W. (1998). The partial least squares approach to structural equation modeling. In G. A. Marcoulides (Ed.), *Modern methods for business research* (pp. 295–336). Lawrence Erlbaum.

Chyung, S. Y., Roberts, K., Swanson, I., & Hankinson, A. (2017). Evidence-based survey design: The use of a midpoint on the Likert scale. *Performance Improvement, 56*(10), 15–23. https://doi.org/10.1002/pfi.21727

ISSN 2808-4934

Dai, H., Dietvorst, B. J., Tuckfield, B., Milkman, K. L., & Schweitzer, M. E. (2018). Quitting when the going gets tough: A downside of high performance expectations. *Academy of Management Journal, 61*(5), 1667–1691. https://doi.org/10.5465/amj.2014.1045

Deloitte. (2020). *"The next wave": Emerging digital life in South and Southeast Asia.* https://www.deloitte.com/content/dam/assets-zone1/cn/en/docs/industries/technology-media-telecommunications/2025/deloitte-cn-tmt-inclusion-en-200924.pdf

DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review, 48*(2), 147–160. https://doi.org/10.2307/2095101

Falk, R. F., & Miller, N. B. (1992). *A primer for soft modeling.* University of Akron Press.

Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods, 41*(4), 1149–1160. https://doi.org/10.3758/BRM.41.4.1149

Fianto, B. A., Gan, C., Widiastuti, T., & Sukmana, R. (2020). Customer loyalty to Islamic banks: Evidence from Indonesia. *Cogent Business & Management, 7*(1), 1859849. https://doi.org/10.1080/23311975.2020.1859849

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*(1), 39–50. https://doi.org/10.1177/002224378101800104

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate data analysis* (8th ed.). Cengage Learning.

Hair, J. F., Matthews, L. M., Matthews, R. L., & Sarstedt, M. (2017). PLS-SEM or CB-SEM: Updated guidelines on which method to use. *International Journal of Multivariate Data Analysis, 1*(2), 107–123. https://doi.org/10.1504/IJMDA.2017.087624

Huang, D., Markovitch, D. G., & Ying, Y. (2017). Social learning and network externalities in decision making. *European Journal of Marketing, 51*(1), 157–176. https://doi.org/10.1108/EJM-10-2015-0703

Katz, M. L., & Shapiro, C. (1985). Network externalities, competition, and compatibility. *American Economic Review, 75*(3), 424–440.

Katz, M. L., & Shapiro, C. (1994). Systems competition and network effects. *Journal of Economic Perspectives, 8*(2), 93–115. https://doi.org/10.1257/jep.8.2.93

King, W. R., & He, J. (2006). A meta-analysis of the technology acceptance model. *Information & Management, 43*(6), 740–755. https://doi.org/10.1016/j.im.2006.05.003

Kirmani, A., & Rosellina, F. (2017). Social influence in marketing: How other people influence consumer information processing and decision making. In S. Harkins, K. Williams, & J. Burger (Eds.), *Oxford handbooks online*. https://doi.org/10.1093/oxfordhb/9780199859870.013.20

Knowles, M. S. (1984). *The adult learner: A neglected species* (3rd ed.). Gulf Publishing.

Kumar, A., Adlakaha, A., & Mukherjee, K. (2018). The effect of perceived security and grievance redressal on continuance intention to use M-wallets in a developing country. *International Journal of Bank Marketing, 36*(7), 1170–1189. https://doi.org/10.1108/IJBM-04-2017-0077

Leong, L., Hew, T., Ooi, K., & Wei, J. (2020). Predicting mobile wallet resistance: A two-staged structural equation modeling–artificial neural network approach. *International Journal of Information Management, 51*, 102047. https://doi.org/10.1016/j.ijinfomgt.2019.102047

ISSN 2808-4934

Luijkx, K., Peek, S., & Wouters, E. (2015). "Grandma, you should do it—it's cool": Older adults and the role of family members in their acceptance of technology. *International Journal of Environmental Research and Public Health, 12*(12), 15470–15485. https://doi.org/10.3390/ijerph121214999

Moorthy, K., Ling, C. S., Fatt, Y. W., Yee, C. M., Chong, E., Yin, K., Yee, K. S., & Wei, L. K. (2017). Barriers of mobile commerce adoption intention: Perceptions of Generation X in Malaysia. *Journal of Theoretical and Applied Electronic Commerce Research, 12*(2), 1–16. https://doi.org/10.4067/S0718-18762017000200004

Neves, B. B., & Mead, G. (2020). Digital technology and older people: Toward a sociological approach to technology adoption in later life. *Sociology, 55*(5), 888–905. https://doi.org/10.1177/0038038520975587

Oliver, R. L. (1980). A cognitive model of the antecedents and consequences of satisfaction decisions. *Journal of Marketing Research, 17*(4), 460–469. https://doi.org/10.1177/002224378001700405

Peek, S. T. M., Luijkx, K. G., Rijnaard, M. D., Nieboer, M. E., Van Der Voort, C. S., Aarts, S., Van Hoof, J., Vrijhoef, H. J. M., & Wouters, E. J. M. (2016). Older adults' reasons for using technology while aging in place. *Gerontology, 62*(3), 226–237. https://doi.org/10.1159/000430949

Putri, A. F., Handayani, P. W., & Shihab, M. R. (2020). Environment factors affecting individuals' continuance usage of mobile payment technology in Indonesia. *Cogent Engineering, 7*(1), 1846832. https://doi.org/10.1080/23311916.2020.1846832

Sánchez-Torres, J. A., Canada, F. A., & Sandoval, A. V. (2017). E-banking in Colombia: Factors favouring its acceptance, online trust and government support. *International Journal of Bank Marketing, 36*(1), 82–100. https://doi.org/10.1108/IJBM-10-2016-0145

Saunders, M., Lewis, P., & Thornhill, A. (2019). *Research methods for business students* (8th ed.). Pearson.

Sarstedt, M., Ringle, C. M., & Hair, J. F. (2017). Partial least squares structural equation modeling. In C. Homburg, M. Klarmann, & A. Vomberg (Eds.), *Handbook of market research* (pp. 1–47). Springer. https://doi.org/10.1007/978-3-319-05542-8_15-1

Scott, W. R. (2008). *Institutions and organizations: Ideas and interests* (3rd ed.). SAGE.

Seifert, A., Kamin, S. T., & Lang, F. R. (2020). Technology adaptivity mediates the effect of technology biography on internet use variability. *Innovation in Aging, 4*(2), igz054. https://doi.org/10.1093/geroni/igz054

Singh, N., Sinha, N., & Liébana-Cabanillas, F. J. (2019). Determining factors in the adoption and recommendation of mobile wallet services in India: Analysis of the effect of innovativeness, stress to use and social influence. International Journal of Information Management, 50, 191–205. https://doi.org/10.1016/j.ijinfomgt.2019.05.022.

Smith, J. R., Louis, W. R., & Schultz, P. W. (2011). Introduction: Social influence in action. *Group Processes & Intergroup Relations, 14*(5), 599–603. https://doi.org/10.1177/1368430211410214

Song, M., Parry, M. E., & Kawakami, T. (2009). Incorporating network externalities into the technology acceptance model. *Journal of Product Innovation Management, 26*(3), 291–307.

Soriano, M., Ziegler, T., Umer, Z., Chen, H., Jenweeranon, P., Zhang, B., Donald, D. C., Lin, L., Alam, N., Luo, C. S., Hao, R., Vig, R., Thien, V. D. H., Rethda, N., Jessica, C. R., Bunruangthaworn, T., Abdul

ISSN 2808-4934

Rahman, R., Oh Kah Yan, G., Kitcharoen, T., Plaza, P. P., Ocampo, C. L. D., & Liu, K. (2019). *The ASEAN FinTech Ecosystem Benchmarking Study.* Cambridge Centre for Alternative Finance, Asian Development Bank Institute & FinTechSpace. https://www.jbs.cam.ac.uk/wp-content/uploads/2020/08/2019-ccaf-asean-fintech-ecosystem-benchmarking-study.pdf

UOB Group. (2021). *State of FinTech in ASEAN.* https://www.uobgroup.com/techecosystem/pdf/UOB-State-of-FinTech-in-ASEAN.pdf

Portz, J. D., Fruhauf, C., Bull, S., Boxer, R. S., Bekelman, D. B., Casillas, A., Gleason, K., & Bayliss, E. A. (2019). "Call a teenager, that's what I do": Grandchildren help older adults use new technologies. *JMIR Aging, 2*(1), e13713. https://doi.org/10.2196/13713

Qasim, H., & Abu-Shanab, E. (2016). Drivers of mobile payment acceptance: The impact of network externalities. *Information Systems Frontiers, 18*(5), 1021–1034. https://doi.org/10.1007/s10796-015-9598-6

Tyler, M., De George-Walker, L., & Simic, V. (2020). Motivation matters: Older adults and information communication technologies. *Studies in the Education of Adults, 52*(2), 175–194. https://doi.org/10.1080/02660830.2020.1731058

van Dijk, J. A. G. M. (2019). *The digital divide.* Polity Press.

Venkatesh, V., & Morris, M. G. (2000). Why don't men ever stop to ask for directions? Gender, social influence, and their role in technology acceptance and usage behavior. *MIS Quarterly, 24*(1), 115–139. https://doi.org/10.2307/3250981

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly, 27*(3), 425–478.

Wei, M. F., Luh, Y. H., Huang, Y. H., & Chang, Y. C. (2021). Young generation's mobile payment adoption behavior: Analysis based on an extended UTAUT model. *Journal of Theoretical and Applied Electronic Commerce Research, 16*(4), 1–20. https://doi.org/10.3390/jtaer16040037

Wu, B., & Chen, X. (2017). Continuance intention to use MOOCs: Integrating the technology acceptance model (TAM) and task–technology fit (TTF) model. *Computers in Human Behavior, 67*, 221–232.

Zhou, T., & Lu, Y. (2011). Examining mobile instant messaging user loyalty from the perspectives of network externalities and flow experience. *Computers in Human Behavior, 27*(2), 883–889. https://doi.org/10.1016/j.chb.2010.11.013

ISSN 2808-4934