

Effectiveness and Efficiency of Gopay Usage Among Generation Z in Rural East Kalimantan

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ABSTRACT

This study evaluates the post-adoption effectiveness and efficiency of GoPay usage among Generation Z in Kutai Kartanegara and Kutai Barat Regencies, East Kalimantan, within the context of 2025 regional fiscal pressures and digital infrastructure limitations in rural settings. The research employs a qualitative approach using a case study method. Data were collected through in-depth interviews, non-participant observation, and documentation involving six Generation Z informants selected through purposive sampling. Data analysis was conducted phenomenologically using NVivo 15 software through textual description, structural description, and synthesis of meanings. The findings indicate that GoPay is perceived as highly effective and efficient due to its transaction speed, ease of use, security features, and promotional benefits that contribute to cost savings. TreeMap and WordCloud visualizations reveal the dominance of terms such as “fast,” “transaction,” “efficient,” and “time” in participants’ narratives. Beyond functioning as a digital payment tool, GoPay also serves as a simple financial management instrument through balance monitoring and transaction history features. However, challenges such as limited digital literacy and unstable internet connectivity remain significant barriers in rural contexts. This study recommends strengthening digital literacy programs and expanding digital infrastructure to optimize financial inclusion for Generation Z in East Kalimantan.

INTRODUCTION

The rapid advancement of digital technology has significantly reshaped global financial systems, particularly through the development of financial technology (fintech). Fintech refers to the utilization of technology in delivering financial products, services, and business models that enhance efficiency, security, stability, and reliability of financial systems (Sugeng et al., 2020). In Indonesia, fintech expansion has been strongly supported by regulatory initiatives such as the National Non-Cash Movement (Gerakan Nasional Non Tunai-GNNT), launched by Bank Indonesia in 2014 (Peraturan Bank Indonesia No.18/40/PBI/2016). This initiative was further reinforced through the Indonesian Payment System Blueprint 2025, which emphasizes digital integration, interoperability, and financial inclusion.

Among various fintech innovations, electronic wallets (e-wallets) have emerged as one of the most widely adopted digital payment instruments. E-wallets function as electronic services that store payment instrument data and facilitate practical non-cash transactions (Megadewandanu et al., 2016). In Indonesia,

surveys show that digital wallets are preferred over traditional bank accounts for online shopping activities, with GoPay reaching approximately 71% user penetration, positioning it as one of the most dominant platforms (Kurniawan, 2022; Insight Asia, 2023).

Generation Z, defined as individuals born between 1997 and 2012, represents the demographic group most immersed in digital ecosystems (Nurulita, 2023). This generation is highly adaptive to instant digital services. Consequently, digital payment systems such as GoPay are not merely optional tools but integral components of daily financial transactions with convenience, promotional incentives, and perceived usefulness significantly influencing their purchasing decisions (Catriana, 2020; Putri Nadhilah et al., 2021). From a marketing perspective, technology, price incentives, and promotional strategies are recognized as central determinants of consumer behavior (Buchari Alma, 2016).

Despite strong national adoption trends, fintech penetration remains uneven across geographic regions. Rural and semi-rural areas such as Kutai Kartanegara and Kutai Barat Regencies in East Kalimantan are confronted with significant digital infrastructure disparities and relatively lower levels of digital financial literacy (Pemerintah Daerah, 2017; Safitri, 2024; Sahdila Putri, 2022). These structural challenges are particularly significant in 2025, where regional fiscal constraint—including budget deficits in Kutai Kartanegara—and challenges in achieving projected growth targets in Kutai Barat demand the optimization of local economic circulation dan efficiency (Kementerian Koperasi dan UKM, 2024; www.bi.go.id, 2020).

In these specific structural contexts, fintech platforms like GoPay potentially function as a catalyst for regional economic resilience. Efficient, fast, and secure transactions are essential for sustaining local commerce, particularly among digitally adaptive populations such as Generation Z. Prior studies frequently apply the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) to explain e-wallet adoption, emphasizing constructs like performance expectancy and price value (Nikhlatius Salma & Permatasari, n.d.). Moreover, trust and perceived risk act as important mediators in emerging markets (Sartika et al., 2021). Hedonic motivation and social influence further strengthen behavioral intention (Sopiyah & Sriyono, 2025b).

GoPay's dominance is also supported by its integration within the broader digital ecosystem (Zeann et al., 2025; Chandra et al., n.d.-a). In times of economic uncertainty, digital efficiency becomes increasingly relevant (Underdown & Tamara, 2025). QRIS integration further strengthens MSME participation in digital transactions (Sopiyah & Sriyono, 2025a). Consequently, fintech adoption contributes to broader digital transformation and financial inclusion in Indonesia (Usman et al., 2025).

Therefore, this study aims not only to analyze the perceived effectiveness and efficiency of GoPay usage among Generation Z in rural East Kalimantan but also to extend UTAUT2 and Theory of Planned Behavior (TPB) frameworks. By positioning effectiveness and efficiency as evaluative post-adoption outcomes rather than mere intention predictors, this research contributes theoretically to digital finance literature and practically to policy discourse on rural financial inclusion.

While previous studies primarily apply UTAUT2 to predict adoption intention in urban settings, limited research evaluates perceived effectiveness and efficiency outcomes in rural, resource-based economies. Moreover, the integration of UTAUT2 and TPB in explaining post-adoption behavioral evaluation remains underexplored. This study addresses this theoretical gap by examining how performance expectancy, price value, facilitating conditions, and perceived behavioral control manifest in real-life financial practices among Generation Z in rural East Kalimantan.

While previous studies predominantly apply UTAUT2 to examine digital wallet adoption intention in urban settings, limited research evaluates perceived effectiveness and efficiency as post-adoption outcomes, particularly within rural and resource-based economies. Moreover, most empirical studies treat UTAUT2 and TPB separately, focusing either on technology acceptance or behavioral intention without integrating both frameworks in explaining real-life financial practices. In the Indonesian context, especially in fiscally pressured regions such as Kutai Kartanegara and Kutai Barat, the role of digital wallets in supporting economic resilience among Generation Z remains underexplored.

THEORETICAL REVIEW

Financial Technology (Fintech)

Financial technology represents the integration of digital innovation into financial service provision (Khando et al., 2023). It enhances operational efficiency, reduces transaction costs, and promotes inclusivity, particularly in emerging markets (Dwika Pradhipta et al., n.d.). Government initiatives such as GNNT and the Indonesian Payment System Blueprint 2025 have significantly accelerated digital payment transformation (Thamrin No, 2019). These policies create regulatory frameworks that ensure security and interoperability while encouraging consumer adoption.

In Indonesia, fintech development is strongly linked to changing consumer behavior. Rapid adoption among Generation Z illustrates a cultural shift toward cashless societies (Lintang Kuswardhani et al., n.d.; Nugraha et al., 2022). Statistical trends demonstrate increasing penetration rates from 2020 to 2025 (Rohaeni et al., 2025). Sustained usage, however, depends on user satisfaction, perceived ease of use, and security (Widadi et al., 2024).

GoPay in the Indonesian Ecosystem

GoPay serves as one of Indonesia's leading digital wallets (Zeann et al., 2025). Its competitive advantage through extensive ecosystem integration and targeted promotional incentives (Chandra et al., n.d.-a). Integration with various services—including transportation, food delivery, and online retail—significantly increases its perceived usefulness (Performance Expectancy). Concurrently, Promotional campaigns and cashback offers enhance price value perceptions which strongly influence behavioral intention.

Efficiency is particularly relevant during economic crises (Underdown & Tamara, 2025). QRIS integration strengthens MSME digitalization (Sopiyah & Sriyono, 2025a). Therefore, GoPay contributes not only to consumer convenience but also to broader economic digitization (Usman et al., 2025).

Unified Theory of Acceptance and Use of Technology 2 (UTAUT2)

UTAUT2 extends the original UTAUT model by incorporating additional constructs specifically relevant to the consumer contexts (Elasaria & Nurabiah, 2024; Serang et al., 2025). Core variables include:

- Performance Expectancy
- Effort Expectancy
- Social Influence
- Facilitating Conditions
- Hedonic Motivation

- Price Value
- Habit

Performance expectancy refers to perceived usefulness. Effort expectancy captures perceived ease of use. Social influence reflects peer and societal encouragement. Facilitating conditions represent infrastructural and organizational support. Hedonic motivation relates to enjoyment in usage, while price value captures economic benefits.

In emerging markets, trust and perceived risk significantly mediate adoption relationships (Sartika et al., 2021; Alvaro & Darmansyah, 2025). High trust reduces perceived risk, strengthening sustained usage intention.

Theory of Planned Behavior (TPB)

The Theory of Planned Behavior (Ajzen, 1991) is a robust model used to predict an individual's intention to engage in a behavior explains in a behavior based on three primary components:

- Attitude toward behavior
- Subjective norm
- Perceived behavioral control

In financial contexts, TPB has been applied to modern payment services (Osman et al., 2024). Moral considerations may enhance predictive power (Chen & Tung, 2014). For rural fintech adoption, perceived behavioral control is particularly relevant due to infrastructural limitations.

Integrating UTAUT2 and TPB

Combining UTAUT2 and TPB provides a comprehensive framework. UTAUT2 explains technological acceptance drivers, while TPB clarifies behavioral intention formation. This integration is highly relevant in rural Indonesian contexts where infrastructural disparities influence facilitating conditions and perceived behavioral control.

Conceptual Framework

This study integrates UTAUT2 and TPB to construct a comprehensive framework explaining post-adoption evaluation of digital wallet usage. From UTAUT2, performance expectancy, price value, hedonic motivation, and facilitating conditions are positioned as technological determinants influencing perceived effectiveness and efficiency. From TPB, attitude and perceived behavioral control explain behavioral evaluation and financial management adaptation. Unlike prior studies focusing on behavioral intention, this model emphasizes perceived effectiveness and efficiency as reflective outcomes of sustained digital wallet usage in rural contexts. The framework suggests that when technological benefits align with positive behavioral control perceptions, digital wallets function not only as payment tools but also as instruments of financial adaptation and resilience.

RESEARCH METHODS

This study employed a qualitative research design using a case study approach and phenomenological orientation to explore in depth the effectiveness and efficiency of GoPay usage among Generation Z in Kutai Kartanegara and Kutai Barat Regencies. The qualitative paradigm was selected as

the research aimed to understand lived experiences, subjective perceptions, and constructed meanings of individuals regarding their daily financial practices prioritizing interpretive depth over statistical generalization. The case study method allowed for an intensive contextual focus on the utilization of digital wallets within regions confronting distinct economic and infrastructural challenges. The study was grounded in a phenomenological orientation, which emphasizes capturing participants' subjective experiences and interpreting the essence of a shared phenomenon (Creswell & Poth, 2016).

The research setting comprised two regencies in East Kalimantan: Kutai Kartanegara and Kutai Barat. These locations were strategically selected because they represent regions with considerable economic potential derived from natural resources that simultaneously face significant structural challenges concerning digital infrastructure and financial inclusion. The contextual backdrop of regional fiscal pressures in 2025 further intensified the relevance of examining how digital financial services contribute to transaction efficiency and economic resilience within these younger populations.

Participants in this study consisted of six informants belonging to Generation Z who actively use GoPay in their daily transactions. Informants were selected through purposive sampling, a technique that determines participants based on specific considerations aligned with research objectives (Sugiyono, 2019). The criteria for selection included being within the Generation Z age cohort, residing in either Kutai Kartanegara or Kutai Barat, and having direct experience in using GoPay for routine financial transactions such as payments, transfers, or purchases. This sampling strategy ensured that participants possessed sufficient experiential knowledge to provide rich and meaningful data relevant to the phenomenon under investigation.

Data collection was conducted through in-depth semi-structured interviews, non-participant observation, and documentation. In-depth interviews allowed the researcher to explore participants' perspectives regarding the perceived effectiveness, efficiency, benefits, and challenges associated with GoPay usage. Although an interview guide was prepared to ensure focus and consistency, flexibility was maintained to enable participants to elaborate freely on their experiences. Interviews were conducted outside participants' working or academic hours to ensure comfort and openness during the discussion process. All interviews were recorded with participants' consent and subsequently transcribed verbatim to preserve accuracy.

Non-participant observation complemented interview data by enabling the researcher to observe participants' transaction processes and application usage behaviors without direct involvement in their activities. This method provided contextual understanding of how GoPay was actually utilized in everyday settings, including transaction flows, balance monitoring, and interaction with merchants. Documentation techniques were also employed to collect supporting evidence, such as transaction screenshots or related digital records, where available. These multiple data collection methods strengthened the credibility of findings by allowing cross-verification.

To ensure data validity and trustworthiness, triangulation techniques were applied. Source triangulation was implemented by comparing information obtained from different informants to identify patterns, similarities, and divergences in their narratives. Method triangulation was achieved by comparing findings from interviews, observations, and documentation to enhance credibility and reduce potential bias. This approach ensured that interpretations were grounded in consistent evidence across multiple data sources.

Data analysis followed the phenomenological reduction process described by Creswell and Poth

(2016). The first stage involved organizing all collected data and reviewing transcripts to ensure completeness and clarity. The researcher then conducted coding by identifying significant statements related to experiences of using GoPay. Through horizontalization, all relevant statements were treated with equal value in the initial stage to avoid premature prioritization. Subsequently, meanings were clustered into thematic categories representing core dimensions of effectiveness and efficiency. The researcher developed textual descriptions to explain what participants experienced and structural descriptions to explain how those experiences occurred within their contextual environment. Finally, the essence of the phenomenon was synthesized to capture the fundamental meaning of GoPay usage among Generation Z in the two regencies.

To support systematic qualitative analysis, NVivo 15 software was utilized. The software facilitated open coding, categorization, and visualization of dominant themes through TreeMap and WordCloud representations. These visual outputs enabled the identification of frequently occurring terms and conceptual relationships within participants' narratives, thereby strengthening analytical rigor. The integration of manual phenomenological interpretation and software-assisted coding ensured depth, transparency, and methodological consistency in the analysis process.

Through this qualitative case study design, the research aimed to provide a comprehensive understanding of how GoPay functions as a digital financial tool within a rural socio-economic context, capturing both subjective perceptions and structural influences shaping adoption and continued usage.

ANALYSIS AND DISCUSSION

This study employed a qualitative research approach using in-depth interviews as the primary data collection method. The informants consisted of six Generation Z individuals residing in Kutai Kartanegara and Kutai Barat who actively use GoPay in their daily financial transactions. The purpose of this stage was to explore in detail their lived experiences, perceptions, and interpretations regarding the effectiveness and efficiency of GoPay usage within the socio-economic environment of East Kalimantan in 2025.

The qualitative data were analyzed using NVivo 15 software to facilitate systematic coding and categorization of interview transcripts. The analysis began with open coding, allowing the researcher to identify recurring terms, themes, and conceptual relationships emerging from participants' narratives. Through this process, clusters of meaning were developed to represent how Generation Z users interpret and experience GoPay usage in their everyday financial activities.

The visualization tools generated by NVivo, particularly the TreeMap and WordCloud features, provided a clear representation of dominant themes and their relative significance. These visualizations do not merely present frequency counts but also illustrate the structural relationships among categories and subcategories identified during the coding process. Each node in the TreeMap represents a conceptual theme derived from interview transcripts, while the size of each node reflects the frequency and intensity with which the theme appeared across participants' narratives.

Conceptually, the findings at the open-coding stage demonstrate that the experience of using GoPay among Generation Z extends beyond functional usage. Rather than viewing GoPay simply as a transactional medium, informants described it as an integrated financial tool embedded in their daily routines. The recurring emphasis on speed, transaction convenience, efficiency, balance management, and promotional benefits suggests that GoPay has become normalized within their economic behavior.

The qualitative patterns also indicate that Generation Z in these rural and semi-rural regions demonstrate a high level of technological adaptation. Despite infrastructural limitations in certain areas, their narratives consistently highlight digital payment as a preferred alternative to cash transactions. This reflects not only technological familiarity but also shifting financial behavior shaped by digital ecosystems.

Furthermore, the results reveal that GoPay's effectiveness is perceived primarily through its ability to provide rapid and seamless transactions. Efficiency, on the other hand, is interpreted in terms of time savings, cost savings through promotional incentives, and improved financial monitoring via digital transaction histories. These interpretations align with theoretical frameworks discussed earlier, including performance expectancy, price value, and perceived behavioral control constructs.

The qualitative evidence also suggests that the socio-economic context of 2025, including regional fiscal pressure and economic uncertainty, reinforces the importance of efficient digital transactions. For Generation Z users, GoPay provides a sense of stability and convenience in navigating daily consumption patterns within an evolving economic landscape.

Thus, the findings confirm that the phenomenon under study is multidimensional. GoPay operates simultaneously as a payment instrument, a budgeting aid, a consumption facilitator, and a symbol of digital adaptation in rural Indonesia.

TreeMap Analysis

The TreeMap visualization generated from NVivo analysis reveals the relative prominence of themes identified in the interview data. The most dominant terms displayed in the TreeMap are "GoPay," "fast," and "transaction." The large rectangular nodes corresponding to these terms indicate that they were repeatedly emphasized by informants throughout the interviews.

The prominence of the term "fast" signifies that speed is perceived as the primary indicator of effectiveness. Informants consistently described how GoPay allows them to complete payments quickly without the need to carry physical cash or wait for change. In rural settings where banking infrastructure may be geographically distant, the ability to execute instant transactions through a mobile device provides significant practical value.

The term "transaction" also appears frequently, reflecting the centrality of payment activities in users' narratives. Informants referred to routine purchases such as food, transportation, mobile credit top-ups, and online shopping. The repeated mention of transaction-related activities suggests that GoPay is embedded in everyday economic practices rather than used sporadically.

Subsequent nodes in the TreeMap include terms such as "bank," "pay," "balance," "efficient," and "expenditure." The appearance of "bank" indicates that users compare GoPay with traditional banking services. Several informants highlighted that transferring funds through GoPay feels more practical and accessible compared to visiting physical bank branches.

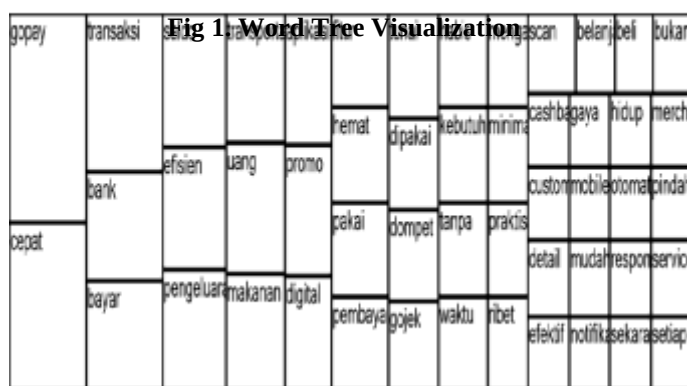
The frequent appearance of "balance" and "expenditure" reflects a shift in financial awareness. Informants noted that they often check their digital balance before making purchases. This behavior suggests that GoPay facilitates basic financial monitoring, allowing users to track spending more consciously. In contrast to cash transactions, where expenditure records are not automatically documented, digital transaction histories provide visible feedback.

The presence of the term "efficient" reinforces the perception that GoPay reduces both time and

effort. Informants described efficiency not only as speed but also as convenience. For example, one participant mentioned that using GoPay eliminates the need to prepare exact change or worry about cash shortages.

The TreeMap visualization thus confirms that effectiveness and efficiency are interpreted through concrete experiential indicators: speed, simplicity, accessibility, and financial transparency. The varying sizes of nodes also indicate thematic hierarchy, with speed and transaction functionality occupying the highest level of importance.

Additionally, the structural relationships among nodes illustrate how themes interconnect. “Fast” is conceptually linked to “transaction,” which in turn connects to “payment” and “bank.” Similarly, “balance” connects to “expenditure” and “efficient.” These relational patterns demonstrate that user experiences are not isolated perceptions but integrated cognitive evaluations of digital financial performance.



(Source: data processed using NVivo)

Beyond frequency representation, the TreeMap analysis offers deeper interpretive insights. The dominance of speed-related expressions indicates that time sensitivity characterizes Generation Z’s financial behavior. As a generation accustomed to instant digital services, delays in transactions may be perceived as inefficiency.

In the context of Kutai Kartanegara and Kutai Barat, where access to physical financial services may involve longer travel times, digital speed becomes even more valuable. Informants expressed that GoPay reduces logistical burdens and enables transactions from anywhere with internet access.

Another important aspect revealed in the TreeMap is the relationship between efficiency and expenditure control. Informants described reviewing transaction histories at the end of the day or week to evaluate their spending patterns. This suggests that GoPay indirectly contributes to financial discipline.

Furthermore, promotional incentives appeared as a recurring theme. Although not as large as “fast” or “transaction,” the term “promo” was frequently mentioned. Participants expressed enthusiasm about discounts and cashback offers. These incentives influence purchasing decisions and strengthen user loyalty.

In summary, the TreeMap analysis reveals that effectiveness is primarily associated with speed and transaction smoothness, while efficiency relates to cost savings and expenditure management.

WordCloud Analysis

The WordCloud visualization provides another perspective on dominant themes by highlighting frequently occurring words in larger font sizes. The most prominent words displayed are “efficient,” “time,” “GoPay,” and “fast.”

The dominance of “efficient” and “time” confirms that time-saving is central to users’ perception of value. Informants frequently used phrases such as “saving time,” “quick payment,” and “no need to wait.” These expressions illustrate that efficiency is measured through temporal reduction.

The presence of “GoPay” as a central term indicates strong platform identification. Rather than referring generically to digital payment, participants explicitly mentioned GoPay, suggesting brand attachment and habitual usage.

The word “promo” also appears noticeably in the WordCloud. Informants explained that promotional offers influence their decision to use GoPay instead of cash. Some participants admitted that discounts encouraged impulse purchases, while others viewed promotions as strategic opportunities to reduce expenses.

Another notable term is “balance,” reflecting financial monitoring behavior. Users reported checking balances before transactions to avoid overspending. This indicates that digital wallets promote transparency in expenditure.

The WordCloud thus complements the TreeMap findings by emphasizing experiential vocabulary used by participants. Together, both visualizations confirm that Generation Z perceives GoPay as effective due to speed and convenient transactions, and efficient due to time savings and promotional advantages.

Fig 2. Word Cloud



(Source: data processed using NVivo)

The findings demonstrate that GoPay functions as more than a transactional platform; it represents a behavioral shift toward digital financial management. Generation Z in Kutai Kartanegara and Kutai Barat exhibits high adaptability despite infrastructural constraints.

Effectiveness is primarily defined by rapid transaction processing, while efficiency encompasses both temporal and economic dimensions. Promotional incentives strengthen perceived value, and digital

balance monitoring enhances financial awareness.

Although network instability occasionally disrupts transactions, overall trust in the platform remains strong. Users demonstrate confidence in GoPay's security mechanisms, indicating positive risk evaluation.

From a socio-economic perspective, the increasing acceptance of digital payments among local merchants suggests ecosystem expansion. GoPay contributes to digital inclusion and supports MSME participation in non-cash transactions.

In conclusion, the qualitative evidence confirms that GoPay significantly enhances transactional efficiency and effectiveness among Generation Z users in rural East Kalimantan, while also shaping evolving financial behaviors within a digitally transforming society.

CONCLUSIONS AND SUGGESTIONS

This study examined the effectiveness and efficiency of GoPay usage among Generation Z in Kutai Kartanegara and Kutai Barat Regencies within the socio-economic context of 2025. Based on qualitative findings, GoPay is widely perceived as both effective and efficient in supporting daily financial transactions. Effectiveness is primarily reflected in transaction speed, convenience, and perceived security. Informants consistently emphasized the importance of rapid digital payments in reducing waiting time, minimizing physical cash handling, and simplifying routine economic activities.

Efficiency is closely linked to time savings, promotional incentives, and improved expenditure monitoring. The presence of cashback programs and discounts significantly strengthens price value perceptions, encouraging sustained platform usage. Furthermore, the digital transaction history enables informal budgeting practices, enhancing perceived financial control among Generation Z users. These findings indicate that GoPay contributes not only to transactional facilitation but also to basic financial awareness.

However, structural challenges remain. Limited internet connectivity and uneven digital infrastructure in rural areas occasionally disrupt transaction processes. While users demonstrate high adaptability and technological familiarity, infrastructural gaps reduce the overall stability of digital payment experiences. Additionally, although trust levels are relatively strong, concerns about digital fraud highlight the ongoing need for cybersecurity awareness and literacy enhancement.

From a broader economic standpoint, GoPay plays a supportive role in promoting MSME digitalization through QRIS integration. Increased merchant participation in digital payment systems fosters local economic circulation and strengthens financial inclusion. In regions experiencing fiscal pressure, digital efficiency may indirectly contribute to economic resilience by maintaining consumption fluidity and transaction continuity.

Based on these findings, several recommendations are proposed. First, policymakers and regulators should prioritize the strengthening of rural digital infrastructure, particularly internet connectivity, to ensure stable facilitating conditions. Second, digital financial literacy programs targeting Generation Z should be expanded to enhance awareness of cybersecurity risks and responsible financial management. Third, collaboration between fintech providers and local governments should be intensified to accelerate QRIS adoption among small and micro enterprises. Finally, future research should adopt longitudinal designs to explore long-term behavioral shifts and measure the sustained economic impact of digital wallet adoption in rural contexts.

In conclusion, GoPay demonstrates significant potential as an instrument of financial efficiency and inclusivity among Generation Z in East Kalimantan. While infrastructural and literacy challenges persist, adaptive user behavior and ecosystem expansion suggest a promising trajectory for rural digital finance transformation.

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