



When Technology Meets Financial Behavior: A Household-Level Study on Digital Payment, Literacy, and Connectivity in Indonesia

Faizal Rizky Yuttama ^{1*}, Budi Widadi ²

¹⁻² Program Studi Manajemen, Fakultas Ilmu Sosial, Universitas Harapan Bangsa, Purwokerto, Indonesia

E-mail: faizal@uhb.ac.id ^{1*}, budi@uhb.ac.id ²

Korespondensi e-mail: faizal@uhb.ac.id

Abstract. The rapid expansion of digital financial services has significantly transformed household financial behavior, particularly in developing economies. However, the effectiveness of these tools in improving household financial efficiency depends not only on their usage but also on users' digital literacy and access to supporting infrastructure. This study aims to examine the influence of digital payment system usage, digital financial literacy, and internet access on household financial efficiency in the context of Indonesia's digital economy. A quantitative survey was conducted among 120 households in Banyumas Regency, Central Java, using a structured questionnaire. Data were analyzed using multiple linear regression after validating assumptions of normality, multicollinearity, and heteroscedasticity. The variables measured included frequency of digital payments, financial literacy levels, internet accessibility, and self-reported financial efficiency. The results indicate that all three independent variables significantly and positively affect household financial efficiency, with digital financial literacy exerting the strongest influence. Digital payment usage and internet access also contributed significantly. These findings suggest that financial efficiency is not merely a function of access or usage but is strengthened when supported by adequate literacy and infrastructure. The study highlights the interdependent role of behavioral and structural factors in enabling effective household financial management. This research contributes to the growing literature on digital financial behavior by focusing on the household level in a semi-urban setting. The findings offer practical implications for policymakers, fintech developers, and financial educators aiming to promote inclusive and efficient digital financial ecosystems.

Keywords: Digital Payment, Literacy, Connectivity, Household Financial

Abstrak. Perluasan pesat layanan keuangan digital telah secara signifikan mengubah perilaku keuangan rumah tangga, khususnya di negara-negara berkembang. Namun, efektivitas alat-alat ini dalam meningkatkan efisiensi keuangan rumah tangga tidak hanya bergantung pada tingkat penggunaannya, melainkan juga pada literasi digital pengguna dan akses terhadap infrastruktur pendukung. Penelitian ini bertujuan untuk mengkaji pengaruh penggunaan sistem pembayaran digital, literasi keuangan digital, dan akses internet terhadap efisiensi keuangan rumah tangga dalam konteks ekonomi digital Indonesia. Survei kuantitatif dilakukan terhadap 120 rumah tangga di Kabupaten Banyumas, Jawa Tengah, dengan menggunakan kuesioner terstruktur. Data dianalisis dengan regresi linier berganda setelah melalui uji asumsi normalitas, multikolinearitas, dan heteroskedastisitas. Variabel yang diukur meliputi frekuensi penggunaan pembayaran digital, tingkat literasi keuangan, aksesibilitas internet, dan efisiensi keuangan berdasarkan persepsi responden. Hasil penelitian menunjukkan bahwa ketiga variabel independen berpengaruh positif dan signifikan terhadap efisiensi keuangan rumah tangga, dengan literasi keuangan digital memberikan pengaruh paling kuat. Penggunaan pembayaran digital dan akses internet juga memberikan kontribusi yang signifikan. Temuan ini menunjukkan bahwa efisiensi keuangan bukan semata-mata merupakan fungsi dari akses atau penggunaan teknologi, tetapi diperkuat melalui literasi yang memadai dan infrastruktur yang mendukung. Penelitian ini menyoroti peran saling terkait antara faktor perilaku dan struktural dalam mendorong manajemen keuangan rumah tangga yang efektif. Kontribusi penelitian ini memperkaya literatur mengenai perilaku keuangan digital dengan fokus pada level rumah tangga di kawasan semi-perkotaan. Temuan ini juga memberikan implikasi praktis bagi pembuat kebijakan, pengembang teknologi keuangan, dan pendidik keuangan dalam rangka mendorong ekosistem keuangan digital yang inklusif dan efisien.

Kata kunci: Pembayaran Digital, Literasi Keuangan, Konektivitas Internet, Efisiensi Keuangan Rumah Tangga

1. INTRODUCTION

The digital revolution has profoundly reshaped how households manage their finances, introducing new tools that promise to increase convenience, accessibility, and efficiency. Around the world, digital payment systems such as mobile banking, QR-based transactions, and e-wallet platforms are increasingly replacing conventional cash-based methods. In Indonesia, this transition is particularly dynamic. Bank Indonesia reported that the value of digital financial transactions surged to over IDR 6,500 trillion in 2022, reflecting a 30.4% increase compared to the previous year. This significant growth is largely attributed to national programs encouraging digital financial inclusion, such as the implementation of QRIS and the expansion of mobile payment infrastructure (Bank Indonesia, 2018).

Despite these advancements, the relationship between digital financial technology and actual financial outcomes—particularly at the household level—remains complex (Suryanto T, Thalassinou EI, 2020). Household financial efficiency, defined as the effective allocation, control, and optimization of financial resources for spending, saving, and budgeting, is not solely determined by access to digital tools. Instead, it requires an interplay between usage behavior, digital financial literacy, and infrastructure support, especially internet access. In this context, digital payment systems can only enhance household financial performance when users understand how to employ them meaningfully and have consistent access to the digital ecosystem.

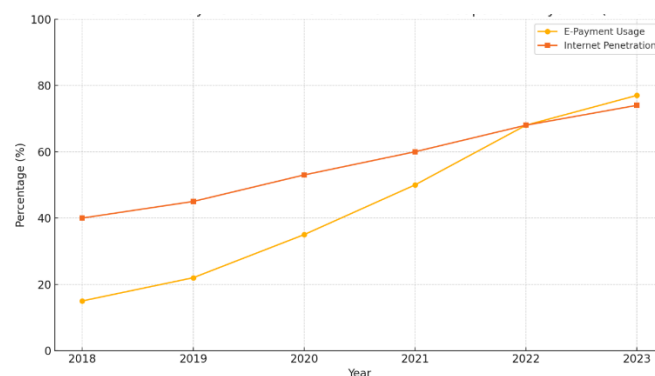


Figure 1. E-Payment Growth Trends and Internet Penetration in Banyumas Regency (2018-2023)

Source: Processed Data, 2024

E-payment usage increased sharply from 15% in 2018 to 77% in 2023, indicating a substantial behavioral shift from cash-based to digital financial transactions. This growth is largely attributed to the expansion of financial technology innovations, aggressive promotional campaigns by digital service providers, and government initiatives such as the nationwide implementation of QRIS and support for e-wallet platforms. Simultaneously,

internet penetration rose steadily from 40% to 74% within the same period, reflecting broader access to digital infrastructure among households.

The correlation between the two variables suggests that internet access is a key enabler of digital payment adoption. However, the slight gap between the rates of internet penetration and e-payment usage implies that access alone does not guarantee effective utilization. This disparity may be influenced by varying levels of digital financial literacy and user confidence in navigating financial technology tools. As such, the graph underscores the importance of a holistic approach in promoting digital financial efficiency not only through infrastructure expansion but also by enhancing public understanding and capability in managing digital financial services. This insight is particularly critical for semi-urban regions like Banyumas, where digital inclusion efforts must be coupled with education and behavioral interventions to realize the full benefits of digital finance.

Several recent studies have examined these factors independently. (Xu L, Zhang R, 2021) highlighted the role of digital services in enhancing access to financial systems but also noted the persistent inequality in digital skills that undermines their effectiveness. (Lusardi & Mitchell, 2014) emphasized that financial behavior changes are more strongly linked to digital literacy than to mere adoption of financial technologies. (Dwipayana IG, Wicaksana IGN, 2023) demonstrated that internet access is a key determinant of financial inclusion, particularly in rural and semi-urban areas where infrastructure gaps remain significant. Additionally, (Chen Y, Wu Y, 2022) and (Arifin Z, Rahman F, 2021) explored the effect of digital payment platforms on consumer behavior and financial tracking, primarily within urban and individual contexts. However, limited studies have comprehensively examined the combined influence of digital payment usage, digital financial literacy, and internet access on household-level financial efficiency, particularly in the context of semi-urban regions in emerging economies such as Indonesia.

To address this gap, the present study investigates the simultaneous effects of digital payment usage, digital financial literacy, and internet access on household financial efficiency in Banyumas Regency, Central Java. As a semi-urban area experiencing rapid yet uneven digital adoption, Banyumas provides a compelling case for analyzing how digital technologies affect household financial behavior and outcomes. This study aims to provide empirical evidence on how these three digital finance dimensions interact to influence financial efficiency, thereby offering theoretical and practical insights for policymakers, financial educators, and digital service providers seeking to enhance household financial resilience in the digital era.

Digital Payment System

Digital payment systems have become a crucial component of modern financial transformation, reshaping the way households conduct daily financial transactions. According to (Chen Y, Wu Y, 2022), the use of digital payment tools such as mobile banking, QRIS, and e-wallets enables households to track expenses, benefit from promotional offers, and manage routine transactions more efficiently. (Arifin Z, Rahman F, 2021) also argue that automatic transaction records and categorization features embedded in digital applications enhance the accuracy and transparency of household budgeting.

However, the benefits of digital payment systems are not always fully realized, especially among users with limited digital competence. Individuals who lack a proper understanding of the technological features may mismanage their finances or overspend. Therefore, digital payment systems can only improve household financial efficiency when users possess sufficient knowledge to utilize them strategically.

Digital Financial Literacy

Digital financial literacy refers to the ability to understand, evaluate, and responsibly use digital financial tools. (Lusardi & Mitchell, 2014) asserts that financial literacy plays a more decisive role in shaping financial behavior than mere access to or use of technology. Individuals with a high level of digital financial literacy are more likely to engage in budgeting, saving, and informed financial decision-making (Zulfiqar G, Wahid F, 2021).

(Xu L, Zhang R, 2021) further emphasize that without adequate financial knowledge, users may misuse digital tools or struggle to interpret financial information. In semi-urban communities where formal financial education may be limited, enhancing digital literacy is essential to ensure the success of financial technology adoption and usage.

Internet Access

Internet access serves as a fundamental prerequisite for the sustainable use of digital financial services (Dwipayana IG, Wicaksana IGN, 2023; Putri RA, 2021) highlight that stable and affordable internet connectivity significantly influences the extent to which households can engage in digital transactions, financial learning, and app-based budgeting. In the absence of proper digital infrastructure, many households experience a “double exclusion” being underserved by both traditional banking and digital financial systems.

Reliable internet access not only facilitates financial transactions but also opens up opportunities for households to access financial education through mobile apps, YouTube,

and social media platforms. Thus, inclusive internet access functions not just as a technical medium, but also as an educational channel that broadens financial knowledge.

Theoretical Foundation

This study is grounded in three main theoretical perspectives:

- Transaction Cost Theory (Williamson, 2019): This theory posits that digital technologies reduce transaction costs such as time, effort, and documentation, thereby enhancing economic efficiency in household financial management.
- Financial Literacy Theory (Lusardi & Mitchell, 2014): This theory highlights the importance of financial knowledge and understanding in making rational decisions, managing risks, and optimizing financial resources.
- Diffusion of Innovation Theory (Akir, 2003): This theory explains how technological innovations, such as digital financial services, are adopted by the public, particularly through communication channels and digital infrastructure access.

By synthesizing these theoretical perspectives, this study develops a conceptual model in which household financial efficiency is influenced not just by digital adoption, but by a household's ability to understand and access digital tools in a supportive infrastructure environment. This integrated framework is particularly relevant for semi-urban regions undergoing digital transition, where behavioral, educational, and structural barriers to financial optimization often coexist.

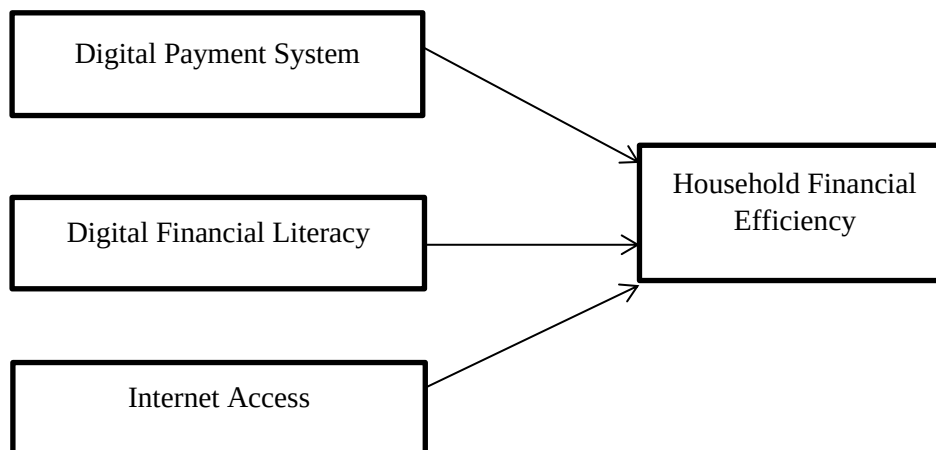


Figure 2. Research Framework

2. RESEARCH METHODS

Research Design

This study employed a quantitative research design to investigate the influence of digital payment systems, digital financial literacy, and internet access on household financial efficiency in the digital economy era (Sekaran U, 2019). A structured survey was administered to systematically gather empirical data from households in Banyumas Regency, Central Java, Indonesia. The research design followed a positivist paradigm, aiming to test hypotheses objectively and derive generalizable findings. The study was designed to offer empirical insights into the extent to which digital financial infrastructure and literacy affect household-level financial management.

Research Location

The research was conducted in Banyumas Regency, a semi-urban region in Central Java that has shown steady growth in the adoption of digital financial technologies. This location was selected due to its active digital transformation initiatives, particularly among households and micro-entrepreneurs, as reported by the Banyumas Department of Cooperatives and SMEs in 2023. The region provides a suitable context for examining the behavioral and financial impacts of digital financial inclusion (Sugiyono, 2018).

Population and Sampling

The target population consisted of households in Banyumas Regency that had used digital payment systems for a minimum of six consecutive months prior to the survey. A purposive sampling method was adopted to ensure that respondents met specific eligibility criteria, including being adult household members (aged 18 years or older), active users of at least one digital payment platform, and having regular access to the internet (J & A, 2020). A total of 120 households were selected from five sub-districts—Purwokerto Timur, Sokaraja, Kembaran, Sumbang, and Ajibarang—ensuring adequate representation and statistical robustness.

Data Sources and Instrumentation

Primary data were collected through a structured questionnaire composed of closed-ended items. The questionnaire was adapted from validated prior studies, including those by (Lusardi & Mitchell, 2014) and (Chen Y, Wu Y, 2022), and used a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). A pilot test was conducted with 20 respondents to evaluate item clarity and the instrument's reliability. The reliability test using Cronbach's Alpha confirmed that all constructs met the minimum threshold of 0.70, indicating good internal consistency.

Measurement of Variables

Four main variables were examined in this study. The independent variables included the digital payment system, digital financial literacy, and internet access, while the dependent variable was household financial efficiency. The digital payment system was defined as the frequency and proportion of non-cash transactions used for household expenditures, measured through indicators such as the number of digital transactions, the types of platforms used, and the share of spending conducted digitally. Digital financial literacy was conceptualized as the level of understanding and competency in utilizing fintech tools for personal financial management, assessed through knowledge of platform features, responsible use, and ability to interpret financial information. Internet access was measured based on the availability, stability, and frequency of usage to support digital financial transactions. Household financial efficiency referred to the effectiveness of managing household finances, including budgeting, expenditure control, financial recordkeeping, and routine saving practices. These constructs and their indicators were adapted from frameworks developed by (OECD, 2021), (Susetyo & Firmansyah, 2023), and (Xu L, Zhang R, 2021).

Instrument Validation

To ensure the quality of the measurement instrument, both pre-testing and expert validation procedures were carried out. A pre-test was conducted with a small sample of 20 respondents to identify any ambiguity or confusion in item wording. In addition, financial researchers and practitioners participated in a focused review to confirm the instrument's content validity. The reliability of the questionnaire was statistically validated using Cronbach's Alpha, with results exceeding 0.70 for all variables, signifying acceptable internal consistency.

Data Analysis Technique

The data were analyzed using multiple linear regression to test the simultaneous and partial effects of the independent variables on household financial efficiency. Prior to hypothesis testing, classical assumption tests were conducted to ensure compliance with the assumptions of the Best Linear Unbiased Estimator (BLUE). These included tests for normality, multicollinearity, and heteroscedasticity (Flury et al., 1988). All statistical analyses were performed using IBM SPSS Statistics version 25.

Model Specification

The relationship among variables in this study was modeled using a multiple regression equation, expressed as:

$$Y=\beta_0+\beta_1X_1+\beta_2X_2+\beta_3X_3+\varepsilon$$

In this equation, Y denotes household financial efficiency, X1 represents the digital payment system, X2 is digital financial literacy, and X3 refers to internet access. The symbol β_0 denotes the constant term, β_1 to β_3 are the regression coefficients, and ε represents the error term.

3. RESULT AND DISCUSSION

Respondent Profile

Table 1. Respondent Profile

Characteristic	Category	Frequency	Percentage (%)
Gender	Male	46	38,3
	Female	74	61,7
Age	18-24 years	14	11,7
	25-34 years	48	40,0
	35-44 years	41	34,2
	45+ years	17	14,2
Education Level	High School	33	27,5
	Diploma (D3)	22	18,3
	Bachelor's Degree (S1)	50	41,7
	Master's Degree (S2)	15	12,5
Monthly Income (IDR)	<3 million	28	23,3
	3-6 million	65	54,2
	>6 million	27	22,5

Source: Processed Data, 2024

The demographic characteristics of the 120 respondents are summarized in Table 1. The majority of participants were female (61.7%), highlighting the significant role women play in managing household financial transactions, particularly in the context of digital payment usage. Respondents were predominantly within the 25–34 age group (40.0%), followed by those aged 35–44 years (34.2%), indicating a concentration of technology-savvy individuals in their productive years. In terms of education, 41.7% of respondents held a bachelor's degree, and 27.5% had completed high school, reflecting a moderately high level of educational attainment. Regarding income distribution, more than half of the respondents (54.2%) reported a monthly income between IDR 3–6 million, indicating a middle-income household group, with the rest spread between below IDR 3 million (23.3%) and above IDR 6 million (22.5%).

Descriptive Statistics

Table 2. Descriptive Statistics

No	Variable	Mean	Standard Deviation	Kurtosis	Skewness
1	Digital Payment System (X1)	4,02	0,74	-0,32	-0,51
2	Digital Financial Literacy (X2)	4,15	0,69	-0,14	-0,34
3	Internet Acces (X3)	3,95	0,71	-0,28	-0,43
4	Household Financial Efficiency (Y)	4,08	0,66	-0,22	-0,39

Source: Processed Data, 2024

Descriptive statistics for the four research variables are presented in Table 2. The mean score for digital financial literacy was the highest at 4.15, suggesting a strong perceived understanding of digital finance tools among respondents. The household financial efficiency variable also showed a relatively high mean (4.08), indicating good self-reported financial management practices. The average score for digital payment system usage was 4.02, reflecting frequent use of digital transaction platforms in daily household expenses. Internet access, while slightly lower, still showed a substantial mean value of 3.95. All variables demonstrated acceptable levels of distribution, with skewness and kurtosis values falling within a reasonable range for normality.

Multiple Regression Analysis

Table 3. Multiple Regression Analysis

No	Variable	Regression Coefficient	t-Value	p-Value
1	Digital Payment System (X1)	0,387	3,014	0,003
2	Digital Financial Literacy (X2)	0,412	3,128	0,002
3	Internet Acces (X3)	0,301	2,295	0,023

Source: Processed Data, 2024

To examine the influence of digital payment systems, digital financial literacy, and internet access on household financial efficiency, a multiple linear regression analysis was conducted. Prior to hypothesis testing, the data were tested for classical assumptions, including normality, multicollinearity, and heteroscedasticity, and met all necessary criteria. The regression results are summarized in Table 3.

All three independent variables were found to have a significant positive effect on household financial efficiency. Digital financial literacy had the highest standardized regression coefficient ($\beta = 0.412$, $p = 0.002$), indicating its strong influence. Digital payment system usage also showed a significant impact ($\beta = 0.387$, $p = 0.003$), as did internet access ($\beta = 0.301$, $p = 0.023$). The model's R^2 value was 0.583, suggesting that 58.3% of the variation in household financial efficiency can be explained by the three

predictors. The F-test value of 24.782 ($p < 0.001$) confirms that the model is statistically significant overall.

Discussion

To the best of our knowledge, this is the first study to comprehensively examine the combined effects of digital payment system usage, digital financial literacy, and internet access on household financial efficiency in a semi-urban Indonesian context. While prior research has focused on financial behavior at the individual level or within commercial settings, this study uniquely centers on the household as a unit of financial analysis, recognizing its critical role in sustaining financial stability amid rapid digital transformation.

The findings indicate that digital financial literacy exerts the strongest influence on household financial efficiency. This suggests that mere access to digital financial tools is insufficient unless accompanied by the ability to understand and utilize these tools strategically. Respondents with higher levels of digital financial literacy were more likely to engage in effective budgeting, track expenses, and maintain disciplined savings behavior. This supports Financial Literacy Theory (Lusardi & Mitchell, 2014), which posits that individuals with stronger financial knowledge and numeracy skills are better equipped to make informed, forward-looking financial decisions. Moreover, this aligns with empirical studies by (Susetyo & Firmansyah, 2023) and (OECD, 2021), which emphasize that digital financial skills enhance resilience in household economies by enabling the effective use of features such as spending limits, transaction history analysis, and automated alerts.

In addition, the use of digital payment systems was found to significantly and positively impact financial efficiency. Households that regularly utilized platforms such as QRIS, mobile banking, and e-wallets demonstrated better expenditure control and financial documentation practices. This finding can be interpreted through the lens of Transaction Cost Theory (Williamson, 2019), where digital payment systems lower the costs associated with traditional cash-based transactions—such as time, effort, and tracking—and thus enhance overall efficiency. The transparency and automatic recordkeeping embedded in digital payment platforms facilitate real-time financial monitoring, a finding that echoes prior work by (Arifin Z, Rahman F, 2021) and (Chen Y, Wu Y, 2022), who found that digital transaction records contribute to more structured household budgeting and financial reflection.

Internet access also showed a significant positive effect on financial efficiency, albeit with a slightly lower coefficient compared to the other variables. The implication is clear: digital engagement begins with digital access. The availability of stable internet connections enables households to utilize financial technology effectively and continuously. According to Diffusion of Innovation Theory (Akir, 2003), innovation adoption is a function of access and communication channels. In this context, households with more reliable internet access are not only able to transact digitally but also consume financial education content via mobile apps, YouTube, and social media. These digital learning pathways reinforce and extend financial literacy, particularly among users in areas where formal financial education may be lacking. Supporting this view, (Dwipayana IG, Wicaksana IGN, 2023) found that digital infrastructure plays a foundational role in fostering inclusive and participatory financial behavior in underserved regions.

Taken together, the results suggest that household financial efficiency in the digital economy is driven not solely by how often technology is used, but by how well it is understood and how reliably it can be accessed. The interdependence of usage, literacy, and infrastructure reflects the emerging notion of “digital financial capability,” which requires both technical access and behavioral competence. This finding has important implications: for governments, there is a clear need to prioritize not just digital infrastructure expansion but also digital financial literacy campaigns targeted at households; for fintech developers, embedding intuitive financial planning tools within payment platforms could enable more impactful user engagement; and for families, adopting financial technology with intentional strategies such as setting spending goals and reviewing digital transaction records could lead to more sustainable financial practices.

Despite its meaningful contributions, this study is not without limitations. First, the scope is geographically restricted to Banyumas Regency, which may limit the generalizability of findings to other regions with differing socio-economic and technological contexts. Second, the use of cross-sectional survey data prevents causal inferences and may be susceptible to common method bias. Third, the reliance on self-reported data, particularly regarding financial efficiency, introduces the potential for social desirability bias, as respondents may overstate prudent financial behaviors. Future studies could address these limitations by adopting longitudinal designs, expanding to diverse geographic locations, and incorporating objective financial performance indicators,

thereby deepening our understanding of digital finance and its long-term effects on household well-being.

4. CONCLUSION

This study provides empirical evidence that digital payment system usage, digital financial literacy, and internet access each play a significant role in enhancing household financial efficiency in the digital economy, with digital financial literacy emerging as the most influential factor. By focusing on households in a semi-urban Indonesian context, the findings highlight that financial efficiency is not merely a function of technology adoption but also of users' ability to understand and leverage digital financial tools within a reliable infrastructure. These results underscore the importance of integrating digital literacy education with financial inclusion initiatives to maximize the benefits of digital finance. Future research should broaden the geographical scope, employ longitudinal designs, and explore additional behavioral and contextual variables to further advance understanding in this evolving field.

REFERENCES

- Akir, Z. (2003). Diffusion of innovations. In *Education and Technology: An Encyclopedia* (Vols. 1–2). Free Press.
<https://doi.org/10.4337/9781800883284.diffusion.of.innovations>
- Arifin Z, Rahman F, P. A. (2021). Digital financial services and household budgeting behavior: Evidence from Indonesia. *International Journal of Economics and Management*, 1(15), 83–96.
- Bank Indonesia. (2018). Statistik Sistem Pembayaran. In *Bank Indonesia*.
<https://www.bi.go.id/id/e404.aspx>
- Chen Y, Wu Y, H. Y. (2022). Impact of mobile payment on household consumption and financial planning: Evidence from Chinese urban families. *Electronic Commerce Research and Applications*, 3(22), 495–520.
- Dwipayana IG, Wicaksana IGN, S. D. (2023). Pengaruh akses internet terhadap inklusi keuangan di daerah semi-perkotaan: Studi di Provinsi Bali. *Jurnal Ekonomi Dan Pembangunan Indonesia*, 1(24), 45–56.
- Flury, B., Murtagh, F., & Heck, A. (1988). Multivariate Data Analysis. In *Mathematics of Computation* (Vol. 50, Issue 181). Cengage Learning.
<https://doi.org/10.2307/2007941>
- J, M., & A, A. K. (2020). Business Research Methods. In *Business Research Methods*. South-Western Cengage Learning. <https://doi.org/10.22573/spg.020.bk/s/026>

- Lusardi, A., & Mitchell, O. S. (2014). The economic importance of financial literacy: Theory and evidence. *Journal of Economic Literature*, 52(1), 5–44. <https://doi.org/10.1257/jel.52.1.5>
- OECD. (2021). *Digital Financial Literacy: OECD/INFE Policy Guidance*.
- Putri RA, N. S. (2021). Internet connectivity and the digital divide in semi-urban financial inclusion. *Jurnal Teknologi Dan Masyarakat*, 2(17), 145–160.
- Sekaran U, B. R. (2019). *Research Methods for Business: A Skill-Building Approach*. Wiley.
- Sugiyono, P. D. (2018). Metode penelitian bisnis: pendekatan kuantitatif, kualitatif, kombinasi, dan R&D. Alfabeta. In *Penerbit CV. Alfabeta: Bandung* (Vol. 225). <https://books.google.co.id/books?id=aFHZzwEACAAJ>
- Suryanto T, Thalassinou EI, T. Y. (2020). Fintech and household financial efficiency: Empirical evidence from Indonesia. *International Journal of Economics and Business Research*, 1(20), 102–118.
- Susetyo, D. P., & Firmansyah, D. (2023). Literasi Ekonomi, Literasi Keuangan, Literasi Digital dan Perilaku Keuangan di Era Ekonomi Digital. *Economics and Digital Business Review*, 4(1), 261–279.
- Williamson, O. E. (2019). Transaction-cost economics: The governance of contractual relations. *Corporate Governance: Values, Ethics and Leadership*, 2(22), 133–162. <https://doi.org/10.1093/oso/9780198774358.003.0007>
- Xu L, Zhang R, W. J. (2021). Financial literacy in the digital age: A systematic review and future directions. *Journal of Financial Services Marketing*, 2(26), 111–123.
- Zulfiqar G, Wahid F, K. M. (2021). Integrating financial literacy and technology adoption for household financial resilience. *Journal of Financial Services Marketing*, 4(26), 209–225.