



Why Do Generation X Consumers Switch from Cash to Digital Payments despite Technological Barriers?

***Dian Safitri Pantja
Koesoemasari¹**

Universitas Wijayakusuma
Purwokerto,
Indonesia

Ady Achadi²

Universitas Wijayakusuma
Purwokerto,
Indonesia

Harsuti³

Universitas Wijayakusuma
Purwokerto,
Indonesia

Enrico Aziezy⁴

Universitas Wijayakusuma
Purwokerto,
Indonesia

Doddy Setiawan⁵

Universitas Negeri Surakarta,
Indonesia

Rosalina Anindia

Sari Kartika⁶

Sekolah Tinggi Ilmu Ekonomi
Satria Purwokerto,
Indonesia

***Corresponding author:**

Dian Safitri Pantja Koesoemasari, Universitas
Wijayakusuma Purwokerto,
Indonesia.

✉ diansafitripkoesoemasari@unwiku.ac.id

Article Info:

Article history:

Received: June 25, 2026

Revised: August 21, 2026

Accepted: August 28, 2026

Available Online: September 24,
2026

Keywords:

Digital Payment; Generation X;
Push-Pull-Mooring; SEM-PLS;
Switching Behavior



This is an open access article under the [CC BY-SA](https://creativecommons.org/licenses/by-sa/4.0/) license.

Copyright © 2026 by Author. Published by
Politeknik Siber Cerdika International

Abstract

Background: The expansion of digital payment infrastructure does not ensure that all age groups abandon cash at the same pace. Generation X is a particularly relevant segment because long-established payment routines and technology-related concerns may shape its willingness to change.

Objective: This study investigated the factors that move Generation X consumers in Banyumas Regency from cash toward digital payments through the Push-Pull-Mooring (PPM) perspective.

Methods: Survey data from 250 Generation X consumers with experience using both cash and digital payment channels were examined using a higher-order SEM-PLS model in SmartPLS 4. Criterion-based purposive sampling was applied.

Results: Push ($\beta = 0.413$; $p < 0.001$) and pull ($\beta = 0.350$; $p < 0.001$) increased switching behavior, whereas mooring reduced it ($\beta = -0.128$; $p = 0.002$). Push produced the largest contribution, showing that dissatisfaction and perceived risk associated with cash were more decisive than the appeal of digital alternatives. Habit and switching cost remained barriers, but their practical influence was comparatively small.

Conclusion: For Generation X in this small-city setting, the shift toward digital payment is driven primarily by reasons to leave cash rather than by attraction to technology alone.

To cite this article: Koesoemasari, D. S. P., Achadi, A., Harsuti, Aziezy, E., Setiawan, D., & Kartika, R. A. S. (2026). Why do Generation X consumers switch from cash to digital payments despite technological barriers? *INKUBIS: Jurnal Ekonomi dan Bisnis*, 8(3), 2438-2447. <https://doi.org/10.59261/inkubis.v8i3.402>

INTRODUCTION

Payment practices are being reshaped by financial technology, with mobile applications, electronic wallets, and QR-based services reducing reliance on physical cash (Syari et al., 2024; Yu & Chen, 2022). Their appeal lies in faster transactions, easier access, and greater convenience (Calderon, 2024; Indrijawati et al., 2024). Use of contactless payment also accelerated after the COVID-19 period (Daragmeh et al., 2021; Wisniewski et al., 2021). Indonesia reflects this broader shift. By the first half of 2025, Bank Indonesia reported about 57 million QRIS users, 39.3 million merchants, and 6.05 billion transactions worth approximately IDR 579 trillion (Bank Indonesia, 2025). Rapid expansion, however, does not mean that every consumer group changes payment

habits in the same way.

Generation X deserves separate attention because switching is different from first-time technology adoption. Consumers in this cohort often have long experience with cash and may evaluate new financial technology more cautiously than younger users (Agárdi & Alt, 2024; Alruthaya et al., 2021; Ruslim et al., 2024). Their decision to move toward digital payment can therefore reflect three simultaneous considerations: problems encountered with cash, perceived advantages of digital alternatives, and forces that preserve existing routines. Examining these competing influences is important for understanding why some mature consumers change despite technological barriers.

The Push-Pull-Mooring (PPM) perspective offers a suitable framework for this question. Originating in migration research Lee (1966) and Moon (1995) and later applied to consumer switching Bansal (2005), PPM separates motives to leave the current option from attractions toward an alternative and from conditions that discourage movement. In this study, dissatisfaction and perceived risk represent the push side; perceived ease of use and alternative attractiveness represent pull; and habit together with switching cost represent mooring (Darmawan, 2022; Lu & Wung, 2020; Yusfiarto et al., 2023). Rather than examining these antecedents separately, the study models push, pull, and mooring as higher-order constructs.

The study contributes to the literature by testing this higher-order PPM structure among Generation X consumers in Banyumas Regency, a smaller urban setting where digital readiness and payment culture may differ from large metropolitan areas. Generation X is operationalized using the 1965-1980 birth-cohort boundary (Pew Research Center, 2019). The central question is whether switching is explained more strongly by dissatisfaction with cash, attraction to digital payment, or inertia created by habit and perceived switching cost. Accordingly, push and pull are expected to increase switching behavior, while mooring is expected to reduce it. The findings are intended to clarify the relative strength of these mechanisms in a mature consumer segment and a small-city context.

METHOD

The study surveyed Generation X consumers in Banyumas Regency who had used both cash and at least one digital payment channel, including e-wallets, QR-code payments, or mobile banking. A criterion-based purposive procedure required respondents to be born between 1965 and 1980, to live in or regularly conduct transactions in Banyumas, and to have experience with both payment modes. The model contained 22 indicators. Following the indicator-based guidance cited from Hair and Alamer (2022) and Sarstedt et al. (2019), at least 220 responses were required; 250 valid questionnaires were retained.

Push was represented by dissatisfaction and perceived risk, pull by perceived ease of use and alternative attractiveness, mooring by habit and switching cost, and the outcome by switching behavior. Measurement items were adapted from established PPM and payment-switching studies, including (Wiranatakusuma & Septiani, 2024; Yu & Chen, 2022; Yusfiarto et al., 2023). Data collection was completed in November 2025. Participation was voluntary and responses were handled anonymously. Because a complete demographic profile was not retained beyond cohort eligibility and payment-use experience, detailed distributions by age, sex, education, occupation, and usage frequency are not reported.

SmartPLS 4 was used to estimate the SEM-PLS model. The analysis first assessed the measurement model through outer loadings, internal consistency, convergent validity, and discriminant validity. The structural model was then evaluated with path coefficients, bootstrapped t statistics and p values, R^2 , f^2 , and Q^2 . A hierarchical component specification combined dissatisfaction and perceived risk into Push Effect, perceived ease of use and alternative attractiveness into Pull Effect, and habit and switching cost into Mooring Effect. This higher-order design permits direct comparison of the three PPM mechanisms at the same level of abstraction (Sarstedt et al., 2019).

RESULTS AND DISCUSSION

Results

The empirical assessment followed the two-stage SEM-PLS procedure. Measurement

quality was examined first, followed by evaluation of the paths from Push Effect, Pull Effect, and Mooring Effect to Switching Behavior.

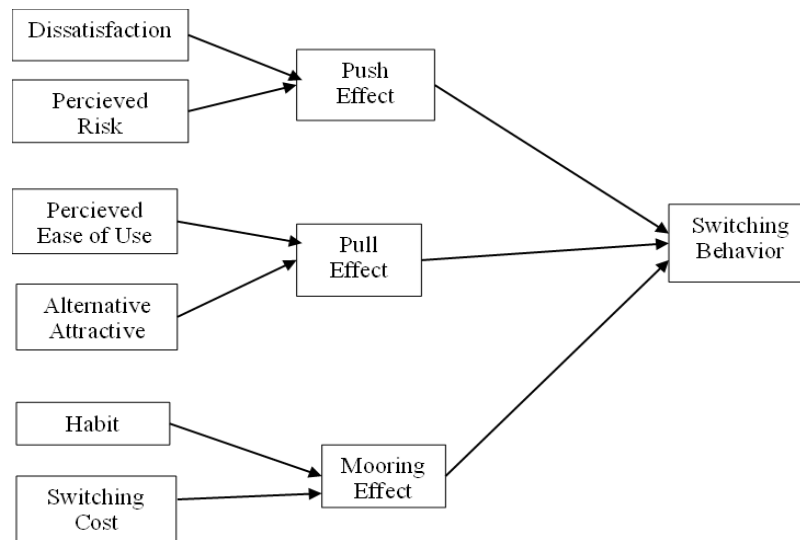


Figure 1. Research Framework

All reported outer loadings exceeded 0.70, ranging from 0.774 to 0.965. This pattern indicates that the retained indicators were sufficiently associated with their intended constructs and supported convergent validity (Hair et al., 2021; Hair et al., 2022). The complete loading estimates are presented in Table 1.

Table 1
Indicator Loadings

Variable	Push Effect	Pull Effect	Mooring Effect	Switching Behavior
DISS1	0.901			
DISS2	0.893			
DISS3	0.931			
RISKA	0.912			
RISKB	0.912			
RISKC	0.912			
POE1		0.901		
POE2		0.907		
POE3		0.919		
ATTA1		0.895		
ATTA2		0.929		
ATTA3		0.907		
HAB1			0.802	
HAB2			0.799	
HAB3			0.774	
SC1			0.822	
SC2			0.817	
SC3			0.816	
SB1				0.955
SB2				0.960
SB3				0.944
SB4				0.965

Construct distinctiveness was checked with the Fornell-Larcker criterion and cross-loadings. The diagonal values in Table 2 were higher than the relevant inter-construct correlations, while each indicator in Table 3 loaded most strongly on its assigned construct. Taken

together, these results provide acceptable evidence of discriminant validity (Fornell & Larcker, 1981; Hair & Alamer, 2022).

Table 2

Fornell-Larcker Assessment

Variable	Push Effect	Pull Effect	Mooring Effect	Switching Behavior
Push Effect	0.910			
Pull Effect	0.857	0.910		
Mooring Effect	-0.579	0.857	0.805	
Switching Behavior	0.786	0.784	-0.588	0.956

Table 3

Cross-Loading Matrix

Item	Alternative Attractive	Dissatisfaction	Habit	Perceived Ease of Use	Perceived Risk	Switching Behavior	Switching Cost
ATTA1	0.960	0.691	-0.412	0.731	0.726	0.691	-0.578
ATTA2	0.969	0.777	-0.465	0.787	0.753	0.712	-0.577
ATTA3	0.962	0.741	-0.449	0.752	0.745	0.724	-0.583
DISS1	0.689	0.956	-0.407	0.723	0.761	0.723	-0.460
DISS2	0.769	0.943	-0.416	0.691	0.758	0.692	-0.509
DISS3	0.731	0.964	-0.449	0.767	0.808	0.746	-0.511
HAB1	-0.474	-0.455	0.937	-0.450	-0.424	-0.469	0.432
HAB2	-0.399	-0.402	0.959	-0.399	-0.369	-0.423	0.408
HAB3	-0.428	-0.404	0.940	-0.417	-0.393	-0.446	0.384
PEO1	0.746	0.740	-0.436	0.957	0.761	0.706	-0.476
PEO2	0.748	0.739	-0.408	0.965	0.754	0.728	-0.504
PEO3	0.772	0.722	-0.445	0.964	0.756	0.720	-0.503
RISKA	0.733	0.776	-0.421	0.762	0.960	0.724	-0.446
RISKB	0.746	0.775	-0.410	0.754	0.962	0.717	-0.452
RISKC	0.730	0.785	-0.371	0.746	0.952	0.692	-0.484
SB1	0.695	0.738	-0.445	0.718	0.705	0.955	-0.527
SB2	0.724	0.719	-0.448	0.706	0.711	0.960	-0.498
SB3	0.678	0.700	-0.432	0.692	0.696	0.944	-0.456
SB4	0.717	0.730	-0.478	0.736	0.727	0.965	-0.513
SC1	-0.563	-0.491	0.422	-0.478	-0.442	-0.487	0.956
SC2	-0.557	-0.490	0.413	-0.484	-0.440	-0.484	0.957
SC3	-0.607	-0.503	0.406	-0.515	-0.500	-0.529	0.960

Tables 2 and 3 therefore support separation among the measured constructs; no indicator showed a stronger loading on a competing construct than on its intended one. Internal consistency was assessed with Cronbach's alpha and Composite Reliability. Values above 0.70 were treated as acceptable in line with the cited PLS-SEM guidance (Hair & Alamer, 2022; Hair et al., 2021).

Table 4

Reliability and AVE

Variable	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Mooring Effect	0.891	0.917	0.648
Pull Effect	0.958	0.966	0.828
Push Effect	0.959	0.967	0.829
Switching Behavior	0.969	0.977	0.914

Reliability and convergent validity were satisfactory for all four higher-order constructs. Composite Reliability ranged from 0.917 to 0.977, while AVE ranged from 0.648 to 0.914. These coefficients exceed the conventional minimums and support use of the constructs in the structural analysis. The structural model was evaluated after the measurement requirements had been met. R^2 was used to summarize explained variance in Switching Behavior, followed by effect-size and predictive-relevance assessment.

Table 5

Explained Variance

Variable	R^2	R^2 Adjusted
Switching Behavior	0.674	0.670

Switching Behavior had an R^2 of 0.674 and an adjusted R^2 of 0.670. Thus, Push Effect, Pull Effect, and Mooring Effect jointly accounted for 67.4% of the observed variance in switching within this sample. The remaining variance reflects influences not represented in the model. Effect sizes were examined to compare the practical contribution of the three predictors rather than relying on statistical significance alone (Hair et al., 2021; Hair et al., 2022).

Table 6

Effect Sizes

Variables	Switching Behavior
Push Effect	0.138
Pull Effect	0.089
Mooring Effect	0.030

Push produced the largest f^2 value (0.138), followed by Pull (0.089) and Mooring (0.030). All three fall below the conventional medium threshold, but the ranking shows that problems associated with cash contributed more strongly to switching than either digital attractiveness or restraining conditions. Predictive relevance was evaluated through Q^2 . A positive value indicates that the model reconstructs the endogenous construct better than a model without predictive relevance (Hair & Alamer, 2022).

Table 7

Predictive Relevance

Variable	$Q^2 (=1-SSE/SSO)$
Switching Behavior	0.607

The Q^2 value for Switching Behavior was 0.607. Because it was well above zero, the model demonstrated substantial predictive relevance for the observed switching outcome. Bootstrapping was then used to test the structural paths. Statistical decisions were based on the reported t statistics and p values, with $p < 0.05$ used as the significance criterion (Hair et al., 2021; Hair et al., 2022).

Table 8

Bootstrapped Structural Paths

	Original Sample (O)	Standard Deviation (STDEV)	T Statistic ($\frac{O}{STDEV}$)	P value
Push effect → dissatisfaction	0.952	0.012	79.791	0.000
Push effect → perceived of risk	0.952	0.012	79.791	0.000
Push effect → switching behavior	0.413	0.075	5.509	0.000
Pull effect → perceived ease of use	0.945	0.015	61.810	0.000
Pull effect → alternative attractive	0.945	0.016	60.695	0.000
Pull effect → switching behavior	0.350	0.089	3.947	0.000

Mooring effect → habit	0.837	0.028	29.610	0.000
Mooring effect → switching cost	0.855	0.020	43.823	0.000
Mooring effect → switching behavior	-0.128	0.041	3.114	0.002

The bootstrap results support all three hypothesized structural directions: Push and Pull were positively associated with Switching Behavior, while Mooring was negatively associated with it.

Push Effect

Push Effect showed the strongest positive path to Switching Behavior ($\beta = 0.413$; $t = 5.509$; $p < 0.001$). Dissatisfaction and perceived risk each loaded at 0.952 on the higher-order construct. The result indicates that Generation X consumers were more inclined to leave cash when they perceived conventional payment as inconvenient, vulnerable, or insufficient for current transaction needs.

Pull Effect

Pull Effect also increased Switching Behavior ($\beta = 0.350$; $t = 3.947$; $p < 0.001$). Perceived ease of use and alternative attractiveness both loaded at 0.945. Digital payment therefore becomes more compelling when it is regarded as simple to operate and clearly advantageous, although this pathway was weaker than the push pathway.

Mooring Effect

Mooring Effect reduced Switching Behavior ($\beta = -0.128$; $t = 3.114$; $p = 0.002$). Habit (0.837) and switching cost (0.855) both contributed strongly to the mooring construct. The negative coefficient shows that familiar routines and the perceived effort or cost of changing payment methods still restrain movement toward digital payment, but the small magnitude indicates a limited practical barrier.

Discussion

The relative size of the three paths is theoretically more informative than significance alone. Push was stronger than Pull, while Mooring was negative but comparatively weak. For Generation X consumers in Banyumas, the transition appears to begin mainly when shortcomings of cash become sufficiently salient. Digital benefits matter, but they seem to become more persuasive after dissatisfaction or risk creates a reason to reconsider the existing payment routine. This ordering extends PPM research by showing that the balance among migration forces can vary with consumer cohort and local context.

Push Effect

The dominance of Push is consistent with work showing that dissatisfaction with an incumbent payment method can trigger movement toward cashless alternatives (Aji et al., 2020; Rosli et al., 2023). Here, the push coefficient ($\beta = 0.413$) exceeded the pull coefficient ($\beta = 0.350$), suggesting that established cash users may need a concrete problem before the benefits of a new service become decisive. For mature consumers, perceived inconvenience and security concerns can therefore function as catalysts rather than merely as negative evaluations.

Risk is especially relevant because payment decisions involve money, personal data, and transaction security. Prior studies report that financial, privacy, performance, and security risks shape adoption and switching decisions in digital finance (Bland et al., 2024; Kumar et al., 2023; Yang et al., 2021). In this study, risk associated with the incumbent cash mode combines with dissatisfaction to form the strongest higher-order force in the model.

The Generation X context reinforces this interpretation. Research has described this cohort as more cautious in evaluating mobile payment, with usefulness and security receiving considerable attention (Agárdi & Alt, 2024; Daragmeh et al., 2021; Ruslim et al., 2024). The present findings therefore suggest that switching becomes more likely when digital payment is perceived not simply as newer, but as a credible response to concrete weaknesses of cash.

Pull Effect

Pull remained significant, confirming that consumers also respond to the perceived advantages of the alternative. Ease of use and attractiveness can lower the psychological and practical burden of changing payment methods (Loh et al., 2020; Yu & Chen, 2022). However, its smaller coefficient implies that convenience alone did not fully overcome entrenched cash routines in this sample.

Ease of use is particularly relevant for users who did not grow up with contemporary payment applications. Clear interfaces, straightforward procedures, and low learning effort can reduce technology-related hesitation and strengthen willingness to adopt digital payment (Ariningsih et al., 2022; Koesoemasari et al., 2025; Ruslim et al., 2024; Saputri, 2022; Setiawan et al., 2025).

Alternative attractiveness concerns whether digital payment offers a noticeably better transaction experience than cash. For Generation X, useful advantages include speed, accessibility, transaction records, security features, and broader payment acceptance (Bachri et al., 2025; Loh et al., 2020; Yu & Chen, 2022). These benefits can reinforce switching once consumers are already open to reconsidering cash.

Evidence from fintech-switching research similarly shows that relative advantage and added benefits can draw users toward a new service (Bachri et al., 2025; Wiranatakusuma et al., 2024; Yunita & Munandar, 2023). The present results refine that evidence by showing that, for this cohort, attraction to the alternative was meaningful but still secondary to the pressure to leave the incumbent method.

Mooring Effect

Mooring acted as a brake rather than a complete barrier. Its negative coefficient confirms the PPM expectation that personal and structural inertia can slow switching Bansal (2005), yet the small effect suggests that these constraints can be overcome when push and pull forces become sufficiently strong. For service providers, this means that age-related resistance should not be treated as fixed; the practical task is to reduce adaptation burdens.

Habit preserves cash use because familiar behavior can continue with little deliberate evaluation. Such inertia has been documented in technology-switching research and can delay adoption even when alternatives offer recognizable benefits (Hidayah & Iriani, 2025; Wiranatakusuma & Septiani, 2024). In the present context, habit remained relevant but did not outweigh the stronger motives pushing consumers away from cash.

Switching cost likewise extends beyond direct monetary expense. It can include the time required to learn an application, adjustment to new procedures, reliance on connectivity, and concern about digital security (Chang et al., 2014; Vlaicu, 2025). These burdens may be particularly salient for Generation X, but the small mooring effect indicates that they are manageable when consumers perceive sufficient reasons and benefits to change.

CONCLUSION

The PPM model explained Generation X switching from cash to digital payment in Banyumas Regency with a clear hierarchy of effects. Push and Pull increased Switching Behavior, whereas Mooring reduced it. Push was the strongest pathway ($\beta = 0.413$), followed by Pull ($\beta = 0.350$), while Mooring exerted a smaller negative effect ($\beta = -0.128$). This pattern shows that dissatisfaction and perceived risk surrounding cash were more influential than the attractiveness of digital alternatives, although ease of use and alternative attractiveness still supported migration. Habit and switching cost slowed the transition without preventing it. Theoretically, the findings demonstrate that the relative weight of PPM forces depends on consumer cohort and setting, with problem-driven switching particularly important among Generation X consumers in a smaller urban area.

For practice, providers should reduce the specific disadvantages that make cash frustrating while making digital services easier to learn, safer to use, and easier to trust. Clear onboarding, simple interfaces, transparent security communication, and accessible assistance are especially relevant for Generation X. Regulators and local financial-inclusion stakeholders can reinforce adoption through practical education on payment procedures, complaint channels,

fraud prevention, and data protection. The study is limited by its single-regency, cross-sectional design, self-reported measures, and incomplete demographic detail. Future research should compare locations and generations, use longitudinal or transaction-based data, and test whether digital literacy, trust, or perceived security changes the strength of the PPM relationships.

ACKNOWLEDGEMENT

The authors thank the Generation X participants in Banyumas Regency for contributing their survey responses. Institutional and academic support from Universitas Wijayakusuma Purwokerto, Universitas Negeri Surakarta, and Sekolah Tinggi Ilmu Ekonomi Satria Purwokerto is also acknowledged. The authors further appreciate the scholarly feedback received during preparation of the manuscript.

AUTHOR CONTRIBUTION STATEMENT

Dian Safitri Pantja Koesoemasari, Ady Achadi, Harsuti, Enrico Aziezy, Doddy Setiawan, and Rosalina Anindia Sari Kartika contributed to the study design, methodological development, investigation, interpretation of the SEM-PLS results, and manuscript preparation. All authors participated in reviewing relevant literature and critically revising the article. Each author approved the final manuscript and accepts responsibility for the integrity and accuracy of the published work.

REFERENCES

- Agárdi, I., & Alt, M. A. (2024). Do digital natives use mobile payment differently than digital immigrants? A comparative study between generation X and Z. *Electronic Commerce Research*, 24(3), 1463–1490. <https://doi.org/10.1007/s10660-022-09537-9>
- 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>
- Alruthaya, A., Nguyen, T.-T., & Lokuge, S. (2021). The Application of Digital Technology and the Learning Characteristics of Generation Z in Higher Education. *Australasian Conference on Information Systems*, 1–7.
- Ariningsih, E. P., Wijayanti, W., & Prasaja, M. G. (2022). Intention to Use E-wallet Dilihat dari Perceived Usefulness, Perceived Ease of Use, Perceived Security, dan Trust. *Jurnal Maksipreneur: Manajemen, Koperasi, dan Entrepreneurship*, 11(2), 227. <https://doi.org/10.30588/jmp.v11i2.916>
- Bachri, A. A., Maulida, M., Sari, Y., & Sunardi, S. (2025). Analyzing Influence Factors of Consumers Switching Intentions from Cash Payments to Quick Response Code Indonesian Standard (QRIS) Digital Payments. *International Journal of Financial Studies*, 13(2), 61. <https://doi.org/10.3390/ijfs13020061>
- Bansal, H. S. (2005). “Migrating” to New Service Providers: Toward a Unifying Framework of Consumers’ Switching Behaviors. *Journal of the Academy of Marketing Science*, 33(1), 96–115. <https://doi.org/10.1177/0092070304267928>
- Bank Indonesia. (2025). QRIS Jelajah Indonesia 2025 Dorong Digitalisasi Dengan Wisata Budaya. Bank Indonesia.
- Bland, E., Changchit, C., Changchit, C., Cutshall, R., & Pham, L. (2024). Investigating the Components of Perceived Risk Factors Affecting Mobile Payment Adoption. *Journal of Risk and Financial Management*, 17(6), 216. <https://doi.org/10.3390/jrfm17060216>
- Calderon, A. A. (2024). Digital Payments and their Role in Enhancing Financial Transactions Efficiency. *International Journal of Economics and Financial Issues*, 15(1), 182–189. <https://doi.org/10.32479/ijefi.17555>
- Chang, I., Liu, C., & Chen, K. (2014). The push, pull and mooring effects in virtual migration for social networking sites. *Information Systems Journal*, 24(4), 323–346. <https://doi.org/10.1111/isj.12030>
- Daragmeh, A., Lentner, C., & Sági, J. (2021). FinTech payments in the era of COVID-19: Factors influencing behavioral intentions of “Generation X” in Hungary to use mobile payment. *Journal of Behavioral and Experimental Finance*, 32, 1–12.

- <https://doi.org/10.1016/j.jbef.2021.100574>
- Darmawan, D. (2022). Literature Review on Antecedents of Customer Switching Behavior. *INTI=Bulletin of Science, Technology and Society*, 1(3), 1–5.
- 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/https://doi.org/10.1177/002224378101800104>
- Hair, J., & Alamer, A. (2022). Partial Least Squares Structural Equation Modeling (PLS-SEM) in second language and education research: Guidelines using an applied example. *Research Methods in Applied Linguistics*, 1(3), 100027. <https://doi.org/10.1016/j.rmal.2022.100027>
- Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021). *Partial Least Squares Structural Equation Modeling (PLS-SEM) Using R: A Workbook*. Springer International Publishing. <https://doi.org/10.1007/978-3-030-80519-7>
- Hidayah, N., & Iriani, L. D. (2025). Understanding payment switching behavior to QRIS in Southwest Papua: A push-pull-mooring study. *Jurnal Ekonomi & Studi Pembangunan*, 26(1), 11–32. <https://doi.org/10.18196/jesp.v26i1.24253>
- Indrijawati, A., Mediaty, Arham, Damayanti, S., & Wahid, M. Z. (2024). A Systematic Literature Review: Determinants of User Interest in Digital Payment Services: Trends and Causes. *Jurnal Economic Resource*, 7(2), 113–132. <https://doi.org/10.57178/jer.v7i2.1011>
- Koesoemasari, D. S. P., Surveyandini, M., Putri, J. A., & Romadhon, S. (2025). Intention To Use Digital Payment On Tradisional Market: The Unified Theory Approach. *Fokus Bisnis Media Pengkajian Manajemen Dan Akuntansi*, 24(1), 106–116.
- Kumar, R., Singh, R., Kumar, K., Khan, S., & Corvello, V. (2023). How Does Perceived Risk and Trust Affect Mobile Banking Adoption? Empirical Evidence from India. *Sustainability*, 15(5), 4053. <https://doi.org/10.3390/su15054053>
- Lee, E. S. (1966). A theory of migration. *Demography*, 3(1), 47–57. <https://doi.org/10.2307/2060063>
- Loh, X.-M., Lee, V.-H., Tan, G. W.-H., Ooi, K.-B., & Dwivedi, Y. K. (2020). Switching from cash to mobile payment: What's the hold-up? *Internet Research*, 31(1), 376–399. <https://doi.org/10.1108/INTR-04-2020-0175>
- Lu, H.-P., & Wung, Y.-S. (2020). Applying Transaction Cost Theory and Push-Pull-Mooring Model to Investigate Mobile Payment Switching Behaviors with Well-Established Traditional Financial Infrastructure. *Journal of Theoretical and Applied Electronic Commerce Research*, 16(2), 1–21. <https://doi.org/10.4067/S0718-18762021000200102>
- Moon, B. (1995). Paradigms in migration research: Exploring “moorings” as a schema. *Progress in Human Geography*, 19(4), 504–524. <https://doi.org/10.1177/030913259501900404>
- Pew Research Center. (2019). Where Millennials end and Generation Z begins. Pew Research Center.
- Rosli, M. S., Saleh, N. S., Md. Ali, A., & Abu Bakar, S. (2023). Factors Determining the Acceptance of E-Wallet among Gen Z from the Lens of the Extended Technology Acceptance Model. *Sustainability*, 15(7), 5752. <https://doi.org/10.3390/su15075752>
- Ruslim, T. S., Herwindiati, D. E., & Cokki. (2024). Adoption of e-wallet in the post-pandemic era: A study on Generation X's intention to use e-wallet. *Innovative Marketing*, 20(2), 267–280. [https://doi.org/10.21511/im.20\(2\).2024.22](https://doi.org/10.21511/im.20(2).2024.22)
- Saputri, M. E. (2022). Pengaruh Performance Expectation, Effort Expectancy, Social Influence, Perceived Risk, Perceived Cost Pada Minat Menggunakan Mobile Payment Di Indonesia. *Jurnal Sosioteknologi*, 21(1), 9–21. <https://doi.org/10.5614/sostek.itbj.2022.21.1.2>
- Sarstedt, M., Hair, J. F., Cheah, J.-H., Becker, J.-M., & Ringle, C. M. (2019). How to Specify, Estimate, and Validate Higher-Order Constructs in PLS-SEM. *Australasian Marketing Journal*, 27(3), 197–211. <https://doi.org/10.1016/j.ausmj.2019.05.003>
- Setiawan, B., Triana, D., Al Azizah, U. S., Wahyuni, A. S., Victor, V., Nathan, R. J., & Fekete-Farkas, M. (2025). Financial technology (Fintech) innovation and financial inclusion: Comparative study of urban and rural consumers post-Covid-19 pandemic. *Journal of Innovation and Entrepreneurship*, 14(1). Scopus. <https://doi.org/10.1186/s13731-024-00452-x>
- Syari, A. P., Karyani, E., Pamungkas, P., & Achsanta, A. F. (2024). Digital Literacy and Cashless Payment: Evidence from Indonesia. *The Asian Journal of Technology Management*, 17(1).

- Vlaicu, R. (2025). Digital Payments Adoption by Consumers and Firms: *Inter-American Development Bank*, 1–32.
- Wiranatakusuma, D. B., & Septiani, R. (2024). *Analysis of Switching Intention of Cash Payment Users to Digital Payment (Linkaja) Using a Push-Pull-Mooring Approach*. <https://doi.org/10.4108/eai.18-12-2023.2349522>
- Wiranatakusuma, D. B., Wahyudi, A. F., Muttaqin, E. I., & Aprizal, A. (2024). Analysis of Switching Intention in Digital Payment Services: Case Study of Universitas Muhammadiyah Yogyakarta. In *SHS Web of Conferences* (Vol. 201, p. 01007). EDP Sciences.. <https://doi.org/10.1051/shsconf/202420101007>
- Wisniewski, T. P., Polasik, M., Kotkowski, R., & Moro, A. (2021). Switching from Cash to Cashless Payments during the COVID-19 Pandemic and Beyond. *SSRN Electronic Journal*, 20(3), 303–371. <https://doi.org/10.2139/ssrn.3794790>
- Yang, M., Mamun, A. A., Mohiuddin, M., Nawi, N. C., & Zainol, N. R. (2021). Cashless Transactions: A Study on Intention and Adoption of e-Wallets. *Sustainability*, 13(2), 831. <https://doi.org/10.3390/su13020831>
- Yu, S.-Y., & Chen, D. C. (2022). Consumers' Switching from Cash to Mobile Payment under the Fear of COVID-19 in Taiwan. *Sustainability*, 14(14), 8489. <https://doi.org/10.3390/su14148489>
- Yunita, E., & Munandar, J. M. (2023). The Influence of Push-Pull-Mooring Effects on E-Wallet Customer Switching in Generation Z in DKI Jakarta. *The South East Asian Journal of Management*, 17(1), 1–27. <https://doi.org/10.21002/seam.v17i1.1177>
- Yusfiarto, R., Sunarsih, S., & Darmawan, D. (2023). Understanding Muslim's switching from cash to m-payments: Based on push-pull-mooring framework. *Journal of Islamic Marketing*, 14(2), 342–365. <https://doi.org/10.1108/JIMA-05-2021-0135>