International Journal of Management and Business Economics (IJMEBE)
Volume 5, Number 1, October 2026, pp. 135-140
E-ISSN: 2964-9412

FINANCIAL PLANNING, DIGITAL FINANCIAL LITERACY, AND FINANCIAL MANAGEMENT CAPABILITY: THE MODERATING ROLE OF DIGITAL FINANCIAL SERVICE ADOPTION

Azis Sutarma[1], Dikdik Harjadi[2], Dede Djuniardi[3], Yanneri Elfa Kiswara Rahmantya[4*]

[1,2,3,4] Program Studi Manajemen, Sekolah Pascasarjana, Universitas Kuningan, Jawa Barat, Indonesia

ARTICLE INFO

Article history:
Received July 19, 2026
Revised August 04, 2026
Accepted August 27, 2026
Available online August 28, 2026

Keywords:
Financial Planning, Digital Financial Literacy, Digital Financial Service Adoption, Financial Management Capability, Moderating Regression Analysis

ABSTRACT

Retired bank customers face unique financial vulnerabilities, including fixed incomes, rising healthcare costs, and the need for long-term financial security, yet remain underrepresented in digital financial literacy research. This study examines the impact of financial planning and digital financial literacy on financial management capability among retired customers of Bank Woori Saudara in Kuningan Regency, Indonesia, with digital financial service adoption as a moderating variable. Using a quantitative-associative survey method, 302 retired bank customers were selected through proportional random sampling. Data were collected using a validated 1–7 interval scale questionnaire and analyzed using Moderating Regression Analysis (MRA). Results show that financial planning (β=0.428), digital financial literacy (β=0.451), and digital financial service adoption (β=0.318) each positively and significantly improve financial management capability. Critically, digital financial service adoption strengthened both the financial planning–capability relationship (interaction β=0.118; p=0.003) and the digital literacy–capability relationship (interaction β=0.142; p=0.001), with the full model explaining 74.1% of variance (R^2=0.741). These findings confirm that digital financial service adoption serves as a practical bridge between financial knowledge and effective financial behavior. For practitioners, the results underscore the importance of designing user-friendly digital banking services and targeted financial education programs tailored to retired customers' specific needs and life-stage challenges.

1. INTRODUCTION

The increasing sophistication of digital financial services has not automatically translated into improved financial management capability among bank customers in Indonesia. Data from the Deposit Insurance Corporation (LPS, 2024) reveals that only approximately 1% of bank savings accounts hold balances above IDR 100 million, reflecting widespread limited savings capacity and consumptive tendencies. Despite the National Financial Literacy and Inclusion Survey (OJK & BPS, 2024) reporting a financial literacy index of 66.46%, a pronounced knowledge-behavior gap persists individuals possess knowledge but fail to translate it into sound financial behaviors. This gap is especially acute in the current digital banking environment, where the proliferation of mobile banking, e-wallets, and digital investment platforms demands new competencies that many customers have yet to develop.

This phenomenon is particularly acute among retired bank customers, who face a confluence of financial vulnerabilities: fixed pension incomes with limited growth potential, escalating healthcare expenditures, the challenge of outliving their savings, and reduced cognitive capacity for complex financial decision-making (Lusardi & Mitchell, 2014). Upon retirement, individuals lose employer-sponsored financial guidance and must independently manage their assets over an extended post-career period. In the current banking environment, digital financial services—mobile banking, automated transfers, digital investment products—have become primary channels for financial management, yet many retirees lack the digital literacy to use them effectively. Preliminary observation of 50 retired customers of Bank Woori Saudara in Kuningan Regency confirmed this vulnerability: only 49% demonstrated healthy financial

*Corresponding author.
E-mail: yanneri@uniku.ac.id

management behaviors (Atkinson & Messy, 2012), with the lowest scores in basic investment decision-making (44%), financial protection (46%), and long-term financial planning (48%).

Prior research shows inconsistent findings on the relationship between financial planning, digital literacy, and financial management capability (Asih et al., 2025; Ratnawati & Brahmayanti, 2024). Some studies report significant direct effects of financial literacy on financial behavior, while others find weak or context-dependent relationships. This inconsistency suggests the presence of boundary conditions—moderating variables that determine when and how financial knowledge translates into effective behavior. Specifically, the moderating role of digital financial service adoption remains largely untested: it is unknown whether active use of digital banking platforms amplifies the impact of financial planning and digital literacy on capability outcomes. This constitutes the primary research gap addressed in this study. The novelty of this research lies in the simultaneous examination of financial planning, digital financial literacy, and digital financial service adoption within a single moderated model, tested on retired bank customers—a population rarely studied in digital financial literacy research despite their heightened financial vulnerability.

This study is grounded in three main theories. Theory of Planned Behavior (Ajzen, 1991) explains that behavior results from attitude, subjective norms, and perceived behavioral control financial literacy shapes attitude, planning reflects structured intention, and digital adoption strengthens perceived control. Technology Acceptance Model (Davis, 1989) explains that technology adoption is driven by perceived usefulness and perceived ease of use. Financial Capability Theory (Sherraden, 2013) argues that capability is determined not only by knowledge but also by access to and effective use of available financial services.

Financial planning encompasses systematic goal-setting, budgeting, resource allocation, and monitoring (Garman & Forgue, 2018). Digital financial literacy refers to the ability to understand, evaluate, and safely use digital financial products (OECD, 2020; Chhillar et al., 2024). Digital financial service adoption is the degree to which users accept and integrate digital banking services into daily financial activities (Venkatesh et al., 2012). Financial management capability encompasses budgeting, cash flow monitoring, consumption control, saving habits, debt management, financial service utilization, long-term planning, risk protection, and investment decision-making (Atkinson & Messy, 2012; Xiao et al., 2022).

Five hypotheses: H1: Financial planning positively and significantly affects financial management capability; H2: Digital financial literacy positively and significantly affects financial management capability; H3: Digital financial service adoption positively and significantly affects financial management capability; H4: Digital financial service adoption moderates the effect of financial planning on financial management capability; H5: Digital financial service adoption moderates the effect of digital financial literacy on financial management capability.

2. METHODS

This study uses a quantitative-associative design with an explanatory survey method, appropriate for testing directional relationships among variables and examining moderating effects (Creswell & Creswell, 2018). The population comprised 1,228 retired customers of Bank Woori Saudara Kuningan with active loans (Kuningan Branch: 810; Luragung Branch: 418). A sample of 302 respondents was selected via proportional random sampling using the Slovin formula (5% margin of error): 199 from Kuningan and 103 from Luragung branches, ensuring representative branch proportionality. Four variables were each measured using 10 indicators on a 1–7 semantic differential scale: Financial Planning (X1; Garman & Forgue, 2018), Digital Financial Literacy (X2; OECD, 2020), Digital Financial Service Adoption (M; Venkatesh et al., 2012), and Financial Management Capability (Y; Xiao & Dew, 2011). A 1–7 scale was selected over the more common 1–5 Likert scale because it provides greater response sensitivity and reduces central tendency bias, which is particularly important for measuring nuanced financial behaviors among retirees (Garman & Forgue, 2018). Instrument validity was confirmed via Product Moment (Pearson) correlation: all 40 items exceeded the r-table threshold of 0.349 at $p < 0.05$ ($n=302$). Reliability was confirmed via split-half Spearman-Brown coefficient (α: 0.759–0.822 across all variables; all > 0.70 threshold). Classical assumption tests confirmed data normality (Kolmogorov-Smirnov: all Asymp.Sig > 0.05), absence of multicollinearity (all VIF < 10), and homoscedasticity (Park test: all Sig > 0.05). Moderating Regression

Analysis (MRA) was conducted across three progressive models: Model 1 (X1, X2→Y; baseline), Model 2 (X1, X2, M→Y; main effects), and Model 3 (X1, X2, M, X1×M, X2×M→Y; full moderation).

3. RESULTS AND DISCUSSIONS

Results

3.1 Descriptive Analysis

All variables were in the medium category: Financial Planning (mean 43.46, SD 9.78; 57.9% medium), Digital Financial Literacy (mean 44.48, SD 10.68; 53.3% medium), Digital Financial Service Adoption (mean 43.97, SD 10.57; 53.6% medium), Financial Management Capability (mean 43.59, SD 10.15; 53.0% medium). Respondents were predominantly female (59.3%), university-educated (59.9%), with 70.2% having dependents and most in the 4–10 year post-retirement range.

3.2 Statistical Assumption Tests

Kolmogorov-Smirnov normality test: all Asymp.Sig > 0.05 (X1=0.445; X2=0.370; M=0.539; Y=0.301) data normally distributed. Multicollinearity: all VIF < 10 (X1=2.058; X2=2.375; M=1.862). Park test for heteroskedasticity: Sig. X1=0.418; X2=0.531 both > 0.05, homoscedastic. All assumptions met.

3.3 Moderated Regression Analysis

Table 1. Model Summary Moderated Regression Analysis

Model	R	R Square	Adj. R Square	Std. Error
1 (X1, X2→Y)	0.756	0.572	0.569	4.825
2 (+M)	0.812	0.659	0.655	4.312
3 (+Interactions)	0.861	0.741	0.736	3.768

3.4 Hypothesis Testing

Table 2. Coefficient Results and Hypothesis Decisions

H	Variable / Interaction	β	t	Sig.	Decision
H1	Financial Planning (X1) → Y	0.428	6.203	0.000	Accepted
H2	Digital Fin. Literacy (X2) → Y	0.451	7.056	0.000	Accepted
H3	Digital Adoption (M) → Y	0.318	5.579	0.000	Accepted
H4	Interaction X1 × M → Y	0.118	3.026	0.003	Accepted
H5	Interaction X2 × M → Y	0.142	3.463	0.001	Accepted

Discussion

Financial planning significantly and positively affected financial management capability (β=0.428; H1 accepted). This finding is consistent with the Life Cycle Hypothesis (Modigliani & Brumberg, 1954), which posits that rational individuals plan consumption and savings across their life span to maintain stable utility a logic especially compelling for retirees with fixed pension income and no further earning capacity. From a Theory of Planned Behavior perspective (Ajzen, 1991), financial planning operationalizes behavioral intention: retirees who systematically set savings goals, allocate budgets, and monitor expenditures develop structured intentions that reliably translate into concrete financial behaviors. The mechanism here is behavioral specificity—planning converts abstract financial goals ("save more") into actionable routines ("transfer 15% of pension to savings on the 1st of each month"), which are known to produce stronger behavioral outcomes than vague intentions (Gollwitzer, 1999). This finding aligns with Asih et al. (2025), who found that structured financial planning was among the strongest predictors of financial management quality in Indonesian contexts.

Digital financial literacy showed the strongest direct effect (β=0.451; H2 accepted), supporting Lusardi and Mitchell's (2014) Financial Literacy Theory, which argues that individuals with higher financial literacy make more informed, forward-looking financial decisions. In the digital banking context, higher digital literacy enables retirees to independently use mobile banking for real-time cash flow monitoring,

compare digital financial products, and assess online transaction risks all of which directly strengthen financial management capability. This is consistent with Financial Capability Theory (Sherraden, 2013), which emphasizes that capability is not merely about knowing what to do, but about effectively deploying available tools and services. The result also aligns with Sarlawa (2025) and Hersanti (2026), who found that digital financial literacy significantly predicted saving behavior and financial resilience among digital bank customers in Indonesia. The stronger effect size of digital literacy (β=0.451) compared to financial planning (β=0.428) suggests that in the current digital banking environment, the ability to navigate digital platforms may have become the more proximate determinant of financial capability for retired customers.

Digital financial service adoption directly affected capability (β=0.318; H3 accepted), consistent with the Technology Acceptance Model (Davis, 1989). Active use of digital banking features automated savings transfers, expenditure tracking dashboards, digital bill payments helps retirees monitor balances, control expenditures, and make timely payments independently, reducing reliance on manual processes that are prone to oversight. Most importantly, adoption moderated both main effects: strengthening the financial planning–capability path (H4: interaction β=0.118; p=0.003) and the digital literacy capability path (H5: interaction β=0.142; p=0.001). The moderating mechanism operates through what can be termed "capability scaffolding": digital platforms provide external structures (reminders, automated rules, real-time feedback) that reinforce the intentions formed through planning and the knowledge acquired through digital literacy. Without access to and active use of these digital tools, even well-informed, well-intentioned retirees may fail to execute sound financial behaviors due to friction, forgetting, or complexity. These findings confirm Widyaningsih et al. (2021) and Sarlawa (2025) that high-quality digital adoption deep feature use rather than mere registration bridges the knowledge-behavior gap in financial management. From a Financial Capability Theory perspective (Sherraden, 2013), this suggests that institutional access (digital platforms) and individual inclination (adoption behavior) interact with knowledge and planning to produce genuine capability.

4. CONCLUSION

All five hypotheses were supported. Financial planning (β=0.428), digital financial literacy (β=0.451), and digital financial service adoption (β=0.318) each positively and significantly affected financial management capability. Digital adoption significantly strengthened both the planning–capability and literacy–capability relationships, confirming its role as a behavioral bridge between knowledge and action. The full model explained 74.1% of variance (R^2=0.741), indicating strong explanatory power. These findings carry important practical implications. First, commercial banks—particularly Bank Woori Saudara and similar institutions serving retired customer segments—should develop structured digital financial education programs tailored to retirees' specific needs: simplified interfaces for mobile banking, step-by-step onboarding for digital payment and savings features, and regular in-branch digital literacy workshops. Second, banks should design age-friendly digital banking services with intuitive navigation, large-text interfaces, and dedicated customer service channels for elderly users, reducing adoption barriers. Third, the Otoritas Jasa Keuangan (OJK) should extend its national digital financial literacy programs to cover retired and elderly populations as a priority segment, given their heightened financial vulnerability and the demonstrated impact of literacy on capability. Fourth, employers and pension fund managers should provide pre-retirement financial planning education that includes digital skills training. This study has several limitations. First, the cross-sectional design precludes causal inference; longitudinal studies are needed to confirm directional effects over time. Second, self-report bias may affect the accuracy of responses on financial behaviors. Third, findings are geographically limited to Bank Woori Saudara customers in Kuningan Regency and may not generalize to other regions or banking contexts. Future research should incorporate self-control, financial attitude, and lifestyle variables as additional predictors; employ mixed methods designs to capture qualitative nuances in retirees' digital adoption experiences; and replicate this model across different bank types (state-owned, Islamic banks) and regions to assess generalizability.

5. ACKNOWLEDGE

The authors thank Bank Woori Saudara Kuningan Regency, all participating retired customers, and the Master of Management Program, Universitas Kuningan for academic support.

6. REFERENCES

Ajzen, I. (1991). The theory of planned behavior. Organizational Behavior and Human Decision Processes, 50(2), 179–211.

Asih, D. N. L., Andrianingsih, V., & Faisol, M. (2025). The impact of financial literacy, financial technology, social environment, and lifestyle on financial management. Jurnal Akademi Akuntansi, 8(2), 314–324.

Atkinson, A., & Messy, F. A. (2012). Measuring financial literacy: Results of the OECD/INFE pilot study. OECD Working Papers on Finance, Insurance and Private Pensions, No. 15.

Chhillar, N., Arora, S., & Chawla, P. (2024). Measuring digital financial literacy: Scale development and validation. Thailand and The World Economy, 42(1), 110–145.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS Quarterly, 13(3), 319–340.

Garman, E. T., & Forgue, R. E. (2018). Personal finance (13th ed.). Cengage Learning.

Hersanti, W. O. R. (2026). Pengaruh literasi keuangan digital terhadap perilaku menabung nasabah bank digital di DKI Jakarta. PENG: Jurnal Ekonomi dan Manajemen, 3(1), 347–359.

Lembaga Penjamin Simpanan. (2024). Distribusi simpanan nasabah perbankan Indonesia. Jakarta: LPS.

Lusardi, A., & Mitchell, O. S. (2014). The economic importance of financial literacy: Theory and evidence. Journal of Economic Literature, 52(1), 5–44.

Modigliani, F., & Brumberg, R. H. (1954). Utility analysis and the consumption function. In K. K. Kurihara (Ed.), Post-Keynesian Economics (pp. 388–436). Rutgers University Press.

Mukarromah, L., & Setyono, J. (2024). Mobile banking adoption: Development of UTAUT 2. Jurnal Bisnis Strategi, 33(2), 158–172.

Natsir, K., Arifin, A. Z., & Ronald, R. (2023). Financial inclusion in the use of digital banking services in Jakarta. International Journal of Application on Economics and Business, 1(4), 2477–2493.

OECD. (2020). OECD/INFE 2020 international survey of adult financial literacy. Paris: OECD.

Otoritas Jasa Keuangan & Badan Pusat Statistik. (2024). Survei Nasional Literasi dan Inklusi Keuangan (SNLIK) 2024.

Ratnawati, T., & Brahmayanti, I. A. S. (2024). The effect of financial inclusion, literacy and fintech on small business profitability. International Journal of Economics, 3(2).

Sarlawa, R. (2025). Digital financial literacy and financial behavior: Pathways to inclusion and resilience. Jurnal Ilmiah Manajemen Kesatuan, 13(6), 5709–5726.

Sherraden, M. S. (2013). Building blocks of financial capability. In J. Birkenmaier et al. (Eds.), Financial capability and asset development (pp. 3–43). Oxford University Press.

Venkatesh, V., Thong, J. Y. L., & Xu, X. (2012). Consumer acceptance and use of information technology: Extending UTAUT. MIS Quarterly, 36(1), 157–178.

Widyaningsih, D., Siswanto, E., & Zusrony, E. (2021). The role of financial literature through digital financial innovation on financial inclusion. International Journal of Economics, Business and Accounting Research, 5(4).

Xiao, J. J., & Dew, J. (2011). The financial management behavior scale: Development and validation. Journal of Financial Counseling and Planning, 22(1), 43–59.

Xiao, J. J., Huang, J., Goyal, K., & Kumar, S. (2022). Financial capability: A systematic conceptual review. International Journal of Bank Marketing, 40(7), 1680–1617.

Creswell, J. W., & Creswell, J. D. (2018). Research design: Qualitative, quantitative, and mixed methods approaches (5th ed.). SAGE Publications.

Gollwitzer, P. M. (1999). Implementation intentions: Strong effects of simple plans. American Psychologist, 54(7), 493–503.