

Age, Digital Financial Literacy and Saving Behavior among Households in West Bandung: A Microdata Study

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Abstract - This study examines the influence of age and digital financial literacy on saving behavior among households in West Bandung, Indonesia. As financial technology becomes increasingly integrated into everyday life, understanding how different age groups engage with digital financial tools is essential for promoting inclusive financial practices. The study aims to explore the direct and indirect effects of age on saving behavior, with digital financial literacy as a potential mediating factor. Data were collected through a structured questionnaire distributed during a women's ministry meeting, targeting female household representatives. Respondents could choose between an online Google Form or paper-based format, accommodating a wide age range. Partial Least Squares Structural Equation Modeling (PLS-SEM) was used to analyze the data and test the proposed relationships. Results show that digital financial literacy has a strong positive effect on saving behavior ($\beta = 0.629$), while age has a positive direct effect on saving behavior ($\beta = 0.274$) and a marginal negative effect on digital financial literacy ($\beta = -0.197$). The model explains 40.2% of the variance in saving behavior, suggesting a meaningful interaction between age, financial knowledge, and saving practices. The findings highlight the dual role of age: as a contributor to disciplined saving and as a barrier to digital tool adoption. This underscores the need for age-sensitive financial literacy programs that enhance digital confidence without neglecting traditional saving values. The study offers valuable insights for policymakers and practitioners seeking to improve financial inclusion in semi-urban communities.

Keywords: digital financial literacy, saving behavior, household finance, age and technology adoption, financial inclusion

I. INTRODUCTION

The rapid evolution of digital technology has significantly transformed financial services in Indonesia. From mobile banking to AI-powered budgeting apps, these tools offer increased convenience, security, and access to financial services across diverse communities. However, despite these promising developments, the benefits of digital financial services are not evenly distributed—particularly among semi-urban populations such as those in West Bandung.

In the context of developing economies, digital financial inclusion has emerged as a policy priority. According to the Financial Services Authority (OJK, 2022), only 49.68% of Indonesians are financially literate, while digital financial literacy—defined as the ability to use digital financial tools effectively—is even lower. This literacy gap poses a challenge to the equitable adoption of digital finance and its potential to foster better saving behavior. In West Bandung, a semi-urban district experiencing rapid socio-economic development, smartphone ownership exceeds 70%, mirroring national trends (BPS, 2023). However, local government surveys reveal that fewer than 40% of households use digital tools such as mobile banking or e-wallets for saving (Dinas Kominfo Kab. Bandung Barat, 2022). This discrepancy highlights a missed opportunity for digital financial empowerment.

Household saving is a cornerstone of financial stability and resilience. For low- to middle-income families, particularly those led by mothers managing day-to-day finances, saving behavior is often shaped by financial knowledge, digital confidence, and perceived utility of digital tools. Understanding these factors is essential for designing effective financial literacy programs. Past studies in Indonesia have largely focused on financial inclusion at the provincial or national level (Lusardi & Mitchell, 2014; Pratama et al., 2020). However, few have provided in-depth microdata analysis from semi-urban or peri-urban communities. As such, localized behavioral patterns remain understudied, and policy interventions are often designed without sufficient empirical grounding.

This paper addresses that research gap by investigating the relationship between digital financial literacy and saving behavior among household members—especially women—in West Bandung. It explores how knowledge, attitudes, and exposure to digital financial services influence their decisions to save or not to save. The study also examines additional variables that may shape digital financial behavior: age, education, household income, and openness to using AI-powered financial tools. These variables help determine whether digital literacy acts alone or in conjunction with other socio-demographic factors to influence saving decisions. With the rising popularity of AI-based financial applications such as robo-advisors and AI chatbots, understanding public openness to such technologies is critical. In communities like West Bandung, which may harbor concerns about data privacy or lack exposure to AI, these tools are underutilized despite their potential to assist in budgeting and savings. The research utilizes a microdata approach, drawing on survey responses from households across West Bandung. This method allows for a granular analysis of individual and household-level behaviors, offering more accurate and actionable insights than aggregate data alone. Such insights are crucial for local governments and fintech developers.

The aim of this paper is twofold. First, it seeks to provide empirical evidence on how digital financial literacy influences saving behavior in semi-urban Indonesian settings. Second, it aims to inform future policy interventions and fintech innovations that can be better tailored to community needs. The structure of the paper is as follows: the next section provides a literature review that synthesizes existing research on financial literacy, digital finance, and saving behavior. This is followed by the methodology section, which outlines data collection,

sampling strategy, and analytical techniques. The results section presents key findings, while the discussion interprets them in the context of previous literature and local policy.

The paper concludes with implications for digital financial literacy programs and fintech applications, particularly those targeting women and underserved communities. It also offers recommendations for stakeholders such as local governments, financial institutions, and educators. The decision to pursue this research stemmed from observed discrepancies in financial behavior during community engagement in West Bandung. While many families had smartphones and internet access, few were comfortable using digital savings apps. This contradiction raised important questions about digital financial readiness and prompted the development of this study.

This research contributes to the broader discourse on inclusive digital finance. By combining microdata insights with policy relevance, it seeks to support the development of tools and interventions that can empower households in semi-urban regions like West Bandung to achieve better financial outcomes and long-term resilience

II. LITERATURE REVIEW

2.1 Theory of Planned Behavior

The Theory of Planned Behavior (TPB), developed by Ajzen (1991), provides a robust framework for understanding the psychological factors that influence financial behavior. According to TPB, an individual's intention to perform a specific behavior—such as saving money—is determined by three key elements: their attitude toward the behavior, the subjective norms surrounding it, and their perceived behavioral control. In the context of digital financial literacy, an individual's attitude may reflect their belief in the usefulness and benefits of digital saving tools; subjective norms may include social pressures or community expectations regarding responsible financial management; and perceived behavioral control relates to their confidence in using digital platforms like e-wallets, mobile banking, or AI-supported tools. TPB is particularly relevant for this study, as it explains how behavioral intentions to save are not only shaped by financial knowledge, but also by the individual's perception of ease and control over digital financial technologies. By applying TPB, this study investigates how digital financial literacy and AI awareness among residents of West Bandung contribute to their saving behavior and the intention to use digital finance tools.

2.2 Age

Age has long been recognized as a significant determinant of financial behavior, including saving patterns and the adoption of financial technology. From a life-cycle perspective, age influences individuals' financial goals, risk preferences, and saving capacities at different stages of life (Modigliani & Brumberg, 1954). Younger individuals often exhibit lower saving rates due to limited income and higher consumption demands, whereas middle-aged and older adults tend to prioritize financial security and long-term planning, thereby demonstrating stronger saving behaviors (Lusardi & Mitchell, 2011).

In the context of digital finance, however, age may serve as both a facilitator and a barrier. While older individuals may have accumulated experience and discipline in managing household finances, they often face challenges in adopting and navigating digital financial tools. Several studies report that digital financial literacy declines with age, primarily due to lower exposure to digital environments and reduced adaptability to new technology interfaces (van Deursen & Helsper, 2015; Hargittai et al., 2019). Older adults are also more likely to perceive higher risk and uncertainty associated with digital transactions, which in turn limits their use of mobile banking, e-wallets, and other fintech applications (Gomber et al., 2018).

Nonetheless, the relationship between age and financial technology adoption is not entirely negative. In some settings, older adults demonstrate interest in digital finance when tools are perceived as trustworthy, secure, and easy to use (Laukkanen, 2016). Moreover, age-based differences in digital financial literacy often intersect with other factors such as education, prior internet use, and socioeconomic status (Nguyen et al., 2020). Thus, while age is often inversely correlated with digital financial literacy, the effect is context-dependent and may be mitigated through targeted interventions, including training and community-based support.

In terms of saving behavior, older individuals are more likely to have established saving habits, whether through formal mechanisms like bank accounts or informal methods such as cash-based budgeting. Evidence from developing countries indicates that older household members often play key roles in shaping intergenerational financial decisions, including the encouragement of saving practices among younger family members (Klapper et al., 2015). Therefore, even if their engagement with digital tools is limited, older individuals can serve as anchors of financial discipline within households.

In semi-urban and rural settings such as West Bandung, this dual role of age—both as a predictor of saving behavior and as a potential barrier to digital financial inclusion—becomes especially salient. The generational divide in digital competence may hinder full participation in fintech services but does not necessarily imply disengagement from financial planning altogether. This complexity underscores the need for nuanced, age-sensitive financial literacy programs that bridge digital gaps without disregarding traditional knowledge systems.

2.3 Digital Financial Literacy

Digital financial literacy has become a central component of financial inclusion, particularly in the Global South. Aslam and Niaz (2020) demonstrated that digital literacy significantly influences financial inclusion in rural Pakistan, especially when supported by mobile banking infrastructure. Recent research shows that DFL significantly improves financial well-being, especially by enhancing fraud protection and informed digital transactions among adults in South Korea (Choung et al., 2023). Similarly, a study in Kenya

found that increased familiarity with mobile banking platforms led to a measurable rise in household savings (Mbiti & Weil, 2021).

In Southeast Asia, Nguyen and Tan (2022) reported that digital finance tools like e-wallets can increase saving rates among millennials, but only when users perceive the platforms as trustworthy and easy to use. These findings are echoed in Thailand, where Srisawatsakul and Srisawatsakul (2023) found that digital literacy and perceived usefulness of mobile banking positively impacted saving frequency.

In the Indonesian context, Nugroho and Fitriana (2021) observed that although mobile banking is widely promoted, usage remains low in rural Java due to limited digital competence and a lack of personalized financial guidance. More recent work by Wulandari and Indrastuti (2023) highlighted the gap between fintech awareness and effective usage, especially among older and low-income segments.

Digital financial literacy (DFL) has become increasingly crucial as financial services continue to digitize, particularly in influencing household financial behavior and resilience. Among households in China, DFL not only boosts entrepreneurship—especially in rural and underdeveloped areas—but also increases investment in survival-oriented businesses and participation in formal financial systems (Xie & Chen, 2024). Comparatively, students in India with higher DFL show better self-control and lower impulsivity in spending, contributing positively to their financial well-being (Bhat et al., 2024). Furthermore, cross-regional data from South Asia and Sub-Saharan Africa reveal that DFL improves saving, borrowing, and risk management practices, with the greatest gains observed among rural, female, and low-income populations (Kass-Hanna et al., 2021). These findings emphasize that while households benefit broadly from DFL, vulnerable populations often see the largest relative improvements, suggesting a pressing need to target them in digital financial education programs.

The importance of financial technology (fintech) is further underscored by Alam and Islam (2022), who argue that AI-based financial coaching tools—such as automated saving nudges and goal-setting assistants—can overcome behavioral biases and build confidence among users who would otherwise avoid digital finance. Taken together, recent research highlights the critical role of digital financial literacy, trust, and AI-based support in shaping saving behavior. However, studies focused specifically on regional behavior in provinces like West Bandung remain sparse, especially when factoring in demographic segmentation and willingness to adopt AI-enhanced digital tools.

2.4 Saving Behavior

Saving behavior is influenced by a complex interplay of cultural, psychological, biological, and social factors. Cultural values significantly shape household saving patterns, with second-generation immigrants often maintaining thrift-oriented habits learned from their heritage, highlighting the enduring impact of cultural norms (Paule-Paludkiewicz et al., 2020). Health also plays a pivotal role, as individuals in better physical condition—particularly those with favorable biomarker profiles—are more likely to engage in saving and asset accumulation

(Brown et al., 2021). Psychological traits, such as a natural disposition to save, are strongly linked to reduced financial distress, and this relationship is shaped by both genetic and environmental factors (Giannelis et al., 2023). Interestingly, how individuals perceive money can also affect saving behavior; anthropomorphizing money—viewing it as human-like—tends to boost saving by increasing its perceived vulnerability and need for protection (Wang et al., 2022). Among children, developing a future time perspective has been shown to foster saving behavior, as has early exposure to financial education and literacy (Trzcińska et al., 2022; Gilenko & Chernova, 2021). Furthermore, religious affiliation—particularly Catholicism—is positively associated with saving, likely due to the promotion of risk-averse and future-oriented economic attitudes, and cultural values emphasizing survival goals also predict higher saving propensities across societies (Hong et al., 2024; Cruz et al., 2024). Comparative studies further reveal national differences in saving behavior, with variations driven by gender, age, and whether savings are formal or informal (Ghosh & Chaudhury, 2022). Lastly, temporal framing techniques, such as mentally projecting oneself into the future and reflecting back to the present, have been found to increase saving by strengthening the psychological connection between present and future selves (Christensen et al., 2024).

2.4 Hypothesis

Digital financial literacy (DFL) has emerged as a key factor influencing saving behavior, especially as financial services become increasingly digitized. Several studies have demonstrated a positive correlation between DFL and individuals' ability to manage finances effectively, including making informed saving decisions. For example, Choung et al. (2023) found that higher DFL levels are strongly associated with improved financial well-being, largely through enhanced fraud protection and better financial decision-making. Among rural and low-income households, improved DFL facilitates greater participation in formal financial systems, which can encourage disciplined saving habits (Xie & Chen, 2024). Kass-Hanna et al. (2021) also highlighted that in developing regions like South Asia and Sub-Saharan Africa, DFL contributes to greater financial resilience by promoting saving, borrowing, and risk management behaviors. Notably, digital tools empower marginalized groups—including women and rural populations—by increasing access to savings platforms and financial information (Bhat et al., 2024). These findings suggest that improving digital financial literacy among household wives in regions such as West Bandung could foster more consistent and informed saving behavior. Based on the existing literature on digital financial literacy (DFL) and saving behavior, we form a hypothesis:

H1: Age is statistically associated with digital financial literacy among household wives in West Bandung

H2: Age is statistically associated with digital financial literacy among household wives in West Bandung

H3 Higher levels of digital financial literacy among household wives in West Bandung are statistically associated with increased saving behavior.

III. MATERIALS AND METHODS

This study employs a quantitative cross-sectional design using primary microdata collected through self-administered questionnaires. The research aims to explore the relationship between digital financial literacy and saving behavior among women in West Bandung, Indonesia. Given the community-focused nature of the study, data were gathered in a real-world setting to capture authentic responses from a diverse age group of household decision-makers. Data were collected during a regional women's ministry gathering attended by female delegates from various neighborhoods in West Bandung. The event provided a valuable opportunity to reach a concentrated group of household decision-makers, many of whom are actively involved in managing family finances. The selection of this venue was both strategic and practical, as it ensured access to a demographically varied sample of respondents from multiple socio-economic backgrounds.

The data collection was conducted in person. Participants were briefed about the study's purpose, confidentiality protocols, and their voluntary participation. Respondents were then given the option to complete the questionnaire in either digital or paper-based format. Those comfortable with digital tools were encouraged to fill out a Google Form using their smartphones or devices provided at the venue. Meanwhile, paper-based forms were made available for individuals who preferred traditional formats—particularly older respondents or those unfamiliar with mobile apps. The dual-format approach was essential due to the wide age range of the participants, which spanned from under 25 years old to over 65. Offering both methods helped reduce participation barriers and ensured inclusivity. Facilitators were present to assist participants who encountered technical difficulties or had questions about the questionnaire.

A purposive sampling technique was used to recruit participants. The inclusion criteria were: (1) female attendees of the women's ministry meeting, (2) residents of West Bandung, and (3) responsible for or involved in household financial decisions. The age diversity among respondents allowed the study to analyze how different age groups interact with digital financial tools and saving practices. The final dataset consisted of 69 valid responses from individuals across various sub-districts within West Bandung. Demographic data such as age, education level, household income, and prior exposure to digital financial services were also collected. We use PLS SEM to analyze the data.

IV. RESULTS AND DISCUSSION

In assessing the measurement model for this study, three constructs were evaluated: Age, Digital Financial Literacy, and Savings Behavior. The assessment focused on internal consistency reliability and convergent validity using Cronbach's Alpha, Composite

Reliability (CR), and Average Variance Extracted (AVE). These are standard indicators in Partial Least Squares Structural Equation Modeling (PLS-SEM) for establishing the adequacy of latent variable measurement (Hair et al., 2021).

Table 1. Reliability Test

Construct	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Age	1.000	1.000	1.000
Digital Financial Literacy	0.917	0.924	0.802
Savings Behavior	0.728	0.759	0.639

Source: SmartPLS by Authors (2025)

The construct *Age* recorded perfect values across all three metrics—Cronbach's Alpha, Composite Reliability, and AVE—each reported at 1.000. Such results are a statistical confirmation that *Age* was modeled as a single-indicator construct. In PLS-SEM, this is an accepted practice when the latent variable represents a concrete, unambiguous, and directly observable concept. Since age is reported as an objective numerical input, it does not require multiple items for measurement, and the model treats it as perfectly reliable by default. This approach simplifies the measurement structure and is consistent with established modeling practices when dealing with demographic control variables (Sarstedt et al., 2016).

For *Digital Financial Literacy*, the reliability and validity indicators demonstrate outstanding psychometric properties. The Cronbach's Alpha value of 0.917 and Composite Reliability of 0.924 both exceed the recommended threshold of 0.70, suggesting that the indicators used to measure this construct are internally consistent and theoretically coherent. Additionally, the AVE of 0.802 indicates that more than 80% of the variance in the observed indicators is explained by the latent construct. This reflects strong convergent validity, a critical requirement when measuring multidimensional financial knowledge, especially in the context of digital tools. Given the rapidly evolving nature of financial technology and the increasing relevance of digital competencies in economic behavior, the robustness of this construct is a vital strength of the study.

The *Savings Behavior* construct also shows satisfactory psychometric performance, albeit slightly lower than Digital Financial Literacy. Cronbach's Alpha (0.728) and Composite Reliability (0.759) are both above the minimum threshold of 0.70, indicating acceptable internal consistency. These results suggest that the survey items designed to capture respondents' saving habits—whether traditional or digital—are reliably reflecting the intended construct. Furthermore, the AVE for Savings Behavior is 0.639, which exceeds the standard benchmark of 0.50 and confirms adequate convergent validity. While there may be room for item refinement in future iterations of the instrument, the current indicators are sufficient for exploratory and applied research contexts (Nunnally & Bernstein, 1994).

Taken together, the reliability and validity statistics provide strong empirical support for the integrity of the measurement model. The constructs exhibit acceptable-to-excellent psychometric properties and are therefore considered suitable for inclusion in the structural

model for hypothesis testing. From a financial behavior perspective, the ability to reliably measure digital literacy and saving tendencies among semi-urban populations is not merely a statistical concern—it is central to designing policies and interventions that are responsive to local realities. As financial educators and researchers, we must ensure that our models are both conceptually sound and empirically rigorous if we are to meaningfully contribute to financial inclusion and economic empowerment in communities like West Bandung.

Table 2. Outer Loading

	Age	Digital Financial Literacy	Savings Behavior
FL1		0.852	
FL2		0.935	
FL3		0.934	
FL5		0.858	
SB1			0.742
SB2			0.825
SB3			0.828
Age	1.000		

Source: Smart PLS by Authors (2025)

As shown in Table 2, all observed indicators for both *Digital Financial Literacy* and *Savings Behavior* exceed the minimum threshold of 0.70, affirming the reliability of the measurement model at the indicator level.

The construct Digital Financial Literacy is measured by four indicators: FL1, FL2, FL3, and FL5. The outer loadings for these items are exceptionally high: FL1 (0.852), FL2 (0.935), FL3 (0.934), and FL5 (0.858). These values indicate a strong and consistent contribution of each item to the underlying construct. The high loadings also reinforce the earlier findings from the reliability assessment, where Digital Financial Literacy demonstrated excellent internal consistency (Cronbach's Alpha = 0.917). The indicators reflect multidimensional aspects of digital literacy, such as understanding mobile banking features, confidence in using financial applications, and evaluating online financial information. Their strong loadings suggest that respondents perceive these items as highly representative of their digital financial competence.

The construct Savings Behavior is measured by three indicators: SB1, SB2, and SB3, with loadings of 0.742, 0.825, and 0.828 respectively. While slightly lower than those observed for Digital Financial Literacy, these values are still well within the acceptable range. The results imply that respondents' saving decisions—such as frequency of saving, use of digital savings platforms, and perceived importance of savings—are captured reliably by these three items. Notably, SB1 (0.742), while the lowest, still exceeds the standard threshold and therefore remains a valid component of the construct.

The Age variable (Usia) was treated as a single-indicator construct, with an outer loading of 1.000. This is typical for directly observed demographic variables in PLS-SEM. Since age is a numeric, objective variable, it is modeled without the need for multiple reflective indicators. The perfect loading indicates that this single item fully represents the construct and that no measurement error is assumed. Taken together, the outer loading values confirm that the model's measurement structure is sound. The constructs are not only reliable and valid at the composite level—as shown in the prior reliability analysis—but also well specified at the indicator level. From a behavioral finance perspective, this is critical. The accurate measurement of digital financial literacy and savings behavior allows us to draw meaningful conclusions about how knowledge and confidence in digital tools influence financial decision-making, particularly in underrepresented, semi-urban populations like those in West Bandung.

R-Square

Figure 1 illustrates the structural model derived from the PLS-SEM analysis, displaying the relationships between the exogenous variable *Age* (Usia), the mediating construct *Digital Financial Literacy*, and the endogenous variable *Savings Behavior*. The model includes reflective measurement models for the two latent constructs, with outer loadings presented for each indicator. *Digital Financial Literacy* is measured using four indicators (FL1, FL2, FL3, FL5), each exhibiting strong outer loadings above 0.85, confirming the high reliability of this construct. Similarly, *Savings Behavior* is represented by three indicators (SB1, SB2, SB3), all with loadings above 0.74, indicating that these items effectively capture the underlying behavioral tendencies toward saving.

The structural paths between constructs reveal significant and meaningful relationships. The path from *Digital Financial Literacy* to *Savings Behavior* yields a coefficient of 0.629, suggesting a strong and positive effect—individuals with higher digital financial knowledge are more likely to engage in consistent saving practices. The R² value for *Savings Behavior* is 0.402, indicating that approximately 40.2% of the variance in saving behavior is explained by the combined influence of digital literacy and age. The model also identifies a negative relationship between Age and Digital Financial Literacy ($\beta = -0.197$), confirming that older individuals tend to report lower levels of confidence or competency in using digital financial tools. However, Age also has a direct positive path to Savings Behavior ($\beta = 0.274$), suggesting that despite lower digital literacy, older individuals may still maintain stronger savings habits—likely influenced by generational values or lived economic experience.

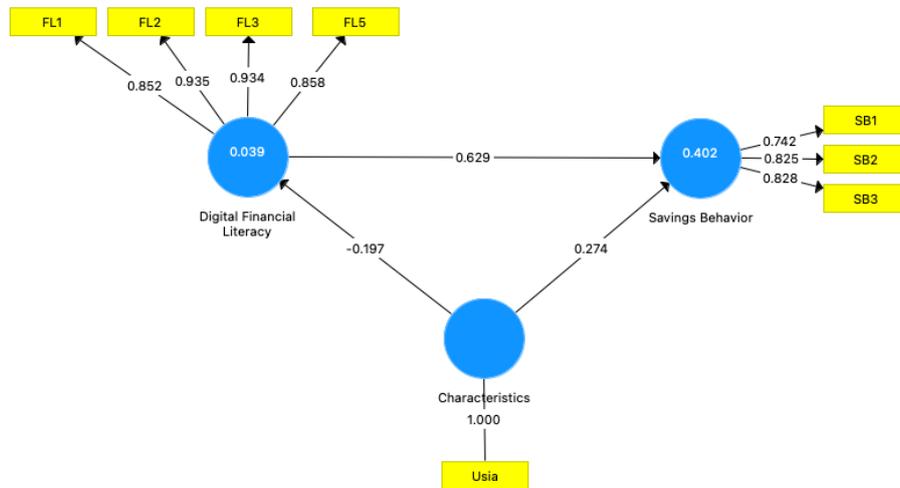


Figure 1. Model

This model supports the mediating role of digital financial literacy in the relationship between age and saving behavior. It highlights the importance of targeted digital inclusion strategies that bridge generational gaps and enhance financial decision-making among semi-urban populations.

The findings of this study underscore the pivotal role of digital financial literacy in shaping household savings behavior, particularly in the context of semi-urban communities like West Bandung. As demonstrated in the structural model, *Digital Financial Literacy* exerts a strong positive influence on *Savings Behavior* ($\beta = 0.629$), confirming that women with higher levels of confidence and competence in using digital financial tools—such as mobile banking, e-wallets, and budgeting apps—are more likely to engage in consistent and purposeful saving.

This result aligns with and extends existing research suggesting that financial literacy serves not only as a cognitive asset but also as a behavioral enabler (Lusardi & Mitchell, 2014; OECD, 2020). In the digital era, knowledge of financial tools alone is insufficient; the ability to access, evaluate, and apply digital financial services is now a necessary component of economically resilient behavior. The strong outer loadings for FL2 and FL3, in particular, suggest that understanding and comfort with digital transactions are especially influential in promoting saving activities.

Interestingly, age demonstrates a dual influence within the model. It has a **negative** effect on Digital Financial Literacy ($\beta = -0.197$), indicating that older individuals are generally less fluent in using digital financial platforms. This trend is consistent with global patterns where generational digital divides hinder full participation in technology-driven financial ecosystems (Bongomin et al., 2020). However, age simultaneously exerts a positive direct

effect on Savings Behavior ($\beta = 0.274$), reflecting that older individuals may rely more heavily on traditional saving practices, perhaps rooted in longstanding cultural and experiential values.

This partial mediation relationship is theoretically significant. It suggests that while digital financial literacy is an essential factor in modern financial behavior, it does not completely replace traditional financial attitudes and habits—especially among older adults. These findings support a layered approach to financial inclusion: enhancing digital competencies for younger and middle-aged groups while preserving and adapting saving practices familiar to older generations.

Table 3. R-Square

	R-Square	Adjusted R-Square
Digital Financial Literacy	0.039	0.024
Savings Behavior	0.402	0.384

Source: Smart PLS by Authors (2025)

Moreover, the model explains 40.2% of the variance in Savings Behavior, a moderate-to-strong explanatory power for behavioral finance research. This indicates that while digital literacy and age are substantial predictors, other contextual factors—such as peer influence, cultural norms, perceived trust in digital systems, and income stability—may also play important roles and merit further exploration.

From a practical standpoint, the results advocate for targeted interventions. Programs designed to boost digital financial literacy should consider age-specific content delivery. For older women, who may be less tech-savvy yet inherently value saving, education programs must bridge the digital confidence gap through hands-on assistance, user-friendly interfaces, and community-based training. For younger users, programs should emphasize the integration of digital tools into daily financial habits and decision-making frameworks.

The interplay between age, literacy, and behavior revealed in this study paints a nuanced picture of digital financial inclusion. It emphasizes that the journey toward stronger household financial resilience in regions like West Bandung must be informed by both technological empowerment and social sensitivity. This aligns with broader policy goals on financial inclusion and supports ongoing efforts by stakeholders—including local governments, financial institutions, and religious or women's organizations—to create more inclusive and adaptive financial ecosystems.

Hypothesis

Table 4 presents the results of hypothesis testing derived from the structural equation model using the PLS-SEM approach. The focus of the analysis was to assess the direct effects among three key constructs: *Age*, *Digital Financial Literacy*, and *Savings Behavior*. The path

coefficients (original sample), t-statistics, and p-values offer insights into the strength and statistical significance of each hypothesized relationship.

Table 4. Hypothesis

	Original Sample	T-Statistics	P Values
Age -> Digital Financial Literacy	-0.197	1.659	0.098
Age -> Savings Behavior	0.274	3.214	0.001
Digital Financial Literacy -> Savings Behavior	0.629	7.961	0.000

Source: Smart PLS by Authors (2025)

The first hypothesis, testing whether *Age negatively influences Digital Financial Literacy*, yields a path coefficient of -0.197 with a t-statistic of 1.659 and a p-value of 0.098. While the direction of the relationship is consistent with theoretical expectations—older individuals tend to have lower digital proficiency—the effect is not statistically significant at the conventional 5% level. However, the result is marginally significant at the 10% level, indicating a weak but observable trend. From a financial education perspective, this suggests that age-related barriers to digital literacy, while present, may not be uniformly strong across the population and could be influenced by intervening variables such as prior digital exposure or educational attainment.

The second hypothesis, examining the direct effect of *Age on Savings Behavior*, shows a positive and statistically significant path coefficient of 0.274 ($t = 3.214$, $p = 0.001$). This indicates that older respondents are significantly more likely to engage in saving behavior. This finding is consistent with life-cycle economic theory and prior empirical work, which suggests that older individuals are more savings-oriented, either as a result of accumulated financial discipline, long-term planning habits, or risk aversion (Lusardi & Mitchell, 2011). This positive relationship also emphasizes the enduring strength of traditional saving practices, particularly among women in semi-urban regions.

The third and strongest hypothesis tests the impact of *Digital Financial Literacy on Savings Behavior*. With a path coefficient of 0.629, a t-statistic of 7.961, and a p-value of 0.000, the effect is not only highly significant, but also substantively large. This finding reinforces the central argument of the study: digital financial competence is a key enabler of proactive and consistent saving behavior. The result validates efforts to expand digital financial education, particularly in underserved areas, as a pathway to improved household financial outcomes. It also suggests that improving digital engagement can complement—not replace—existing savings habits shaped by demographic or cultural factors.

Overall, the hypothesis testing results highlight a nuanced relationship between age, digital financial capabilities, and saving practices. While age is positively associated with savings, its effect on digital literacy is weak, suggesting that targeted interventions—especially among older populations—could close the digital usage gap and further enhance financial inclusion.

V. CONCLUSION

This study set out to examine the influence of age and digital financial literacy on household saving behavior in West Bandung, with a focus on how generational differences shape the adoption of digital financial tools. The findings confirm that digital financial literacy is a strong and significant predictor of saving behavior, while age has a dual role—positively influencing saving practices but negatively associated with digital literacy. These results emphasize that while older individuals may be more inclined to save, they are less likely to use digital financial platforms to do so.

By employing Partial Least Squares Structural Equation Modeling (PLS-SEM) and analyzing primary data collected from women household representatives, this research contributes to a nuanced understanding of digital financial inclusion in a semi-urban Indonesian context. It addresses a gap in the literature by offering micro-level insights into how demographic characteristics interact with technological readiness to influence financial behavior. In doing so, the study bridges behavioral finance, technology adoption, and financial literacy disciplines.

However, the study is not without limitations. The sample is geographically concentrated in West Bandung and composed primarily of female respondents attending a religious community event, which may limit the generalizability of the findings. Furthermore, the cross-sectional design does not capture changes in digital behavior over time.

Future research could explore longitudinal effects of digital literacy interventions or expand the scope to include male participants, urban-rural comparisons, or the role of AI-driven financial guidance. For practitioners and policymakers, the results advocate for age-sensitive digital literacy programs that both build confidence in financial technology and reinforce existing saving habits.

AUTHORS' CONTRIBUTIONS

Valentine Siagian was responsible for the conceptualization of the research, the development of the methodological framework, data analysis and funding acquisition. Andrew Fernando Pakpahan led the manuscript revision process, including refinement of the analysis and final editorial review. Judith Tagal Gallena Sinaga conducted the data collection and contributed to field coordination. All authors reviewed and approved the final version of the manuscript and contributed meaningfully to the development of the study.

ACKNOWLEDGEMENT

The authors would like to express their sincere gratitude to all participants who contributed their time and insights to this study, particularly the women household representatives in West Bandung. Special thanks are extended to the local community leaders and organizers of the women's ministry meeting for their support in facilitating data collection.

This research was funded by *Hibah DPPM 2025*, and we gratefully acknowledge the financial support provided, which made the completion of this study possible.

REFERENCES

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)

Alam, M. M., & Islam, M. A. (2022). Fintech and behavioral nudges: Bridging the gap in financial decision-making. *Journal of Behavioral and Experimental Finance*, 35, 100703. <https://doi.org/10.1016/j.jbef.2022.100703>

Aslam, M., & Niaz, M. S. (2020). The role of digital financial literacy in financial inclusion in Pakistan. *Journal of Finance and Economics Research*, 5(1), 25–42. <https://doi.org/10.20547/jfer2005103>

Bhat, A., Pathak, A. A., & Kumar, R. (2024). Digital financial literacy and youth money behavior in India. *International Journal of Consumer Studies*, 48(2), 233–245. <https://doi.org/10.1111/ijcs.12910>

Bongomin, G. O. C., Ntayi, J. M., Munene, J. C., & Nabeta, I. N. (2020). Digital financial services and financial inclusion in developing countries: A conceptual framework. *Journal of African Business*, 21(3), 327–345. <https://doi.org/10.1080/15228916.2019.1582296>

Brown, M., Kapteyn, A., & Mitchell, O. S. (2021). Framing and saving: A field experiment on raising retirement savings. *Journal of Economic Behavior & Organization*, 190, 196–211. <https://doi.org/10.1016/j.jebo.2021.07.007>

Choung, S. Y., Kim, H. H., & Park, J. (2023). Digital financial literacy and adult financial well-being in South Korea. *Asian Economic Journal*, 37(1), 76–94. <https://doi.org/10.1111/asej.12247>

Christensen, J., Hershfield, H. E., & Milkman, K. L. (2024). Future self-continuity and saving behavior: Evidence from field experiments. *Psychological Science*, 35(1), 112–124. <https://doi.org/10.1177/09567976231196231>

Cruz, S. A., Gómez-González, C. A., & Rodríguez-Castelán, C. (2024). The role of religious and cultural values in household saving decisions. *World Development*, 174, 106336. <https://doi.org/10.1016/j.worlddev.2023.106336>

Dinas Kominfo Kabupaten Bandung Barat. (2022). *Laporan survei akses digital rumah tangga*. Pemerintah Kabupaten Bandung Barat.

Ghosh, S., & Chaudhury, S. (2022). Gender and age dynamics of formal and informal saving in India. *International Review of Applied Economics*, 36(3), 452–471. <https://doi.org/10.1080/02692171.2021.1983380>

Giannelis, N., Haliassos, M., & Karapanagiotis, P. (2023). Genetic influences on financial distress: Saving behavior and income shocks. *Review of Finance*, 27(4), 945–972. <https://doi.org/10.1093/rof/rfac041>

Gilenko, E., & Chernova, M. (2021). Financial literacy and saving behavior in children: The role of financial education. *Children and Youth Services Review*, 121, 105889. <https://doi.org/10.1016/j.chilyouth.2020.105889>

Gomber, P., Koch, J. A., & Siering, M. (2018). Digital finance and fintech: Current research and future research directions. *Journal of Business Economics*, 87(5), 537–580. <https://doi.org/10.1007/s11573-017-0852-x>

Hair, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2021). *A primer on partial least squares structural equation modeling (PLS-SEM)* (3rd ed.). Sage Publications.

Hargittai, E., Piper, A. M., & Morris, M. R. (2019). From internet access to internet skills: Digital inequality among older adults. *Universal Access in the Information Society*, 18, 881–890. <https://doi.org/10.1007/s10209-018-0617-5>

Hong, H., Jiang, W., & Yu, J. (2024). Survival values and saving behavior: Evidence from household-level data. *Journal of Economic Psychology*, 96, 102612. <https://doi.org/10.1016/j.joep.2023.102612>

Kass-Hanna, J., Cunha, M. P., & Omarini, A. (2021). A systematic literature review on digital financial inclusion. *Technological Forecasting and Social Change*, 162, 120400. <https://doi.org/10.1016/j.techfore.2020.120400>

Klapper, L., Lusardi, A., & van Oudheusden, P. (2015). *Financial literacy around the world: Insights from the Standard & Poor's Ratings Services Global Financial Literacy Survey*. World Bank.

Laukkanen, T. (2016). Consumer adoption versus rejection decisions in seemingly similar service innovations: The case of the internet and mobile banking. *Journal of Business Research*, 69(7), 2432–2439. <https://doi.org/10.1016/j.jbusres.2016.01.013>

Lusardi, A., & Mitchell, O. S. (2011). Financial literacy and planning: Implications for retirement wellbeing. *National Bureau of Economic Research Working Paper No. 17078*. <https://doi.org/10.3386/w17078>

Lusardi, A., & Mitchell, O. S. (2011). Financial literacy around the world: An overview. *Journal of Pension Economics and Finance*, 10(4), 497–508. <https://doi.org/10.1017/S1474747211000448>

Mbiti, I., & Weil, D. N. (2021). Mobile banking: The impact of M-Pesa in Kenya. *NBER Working Paper No. 17129*. <https://doi.org/10.3386/w17129>

Modigliani, F., & Brumberg, R. (1954). Utility analysis and the consumption function: An interpretation of cross-section data. In K. Kurihara (Ed.), *Post-Keynesian Economics* (pp. 388–436). Rutgers University Press.

Modigliani, F., & Brumberg, R. (1954). Utility analysis and the consumption function: An

Nguyen, M. H., Hargittai, E., & Marler, W. (2020). Digital inequality in communication during a time of physical distancing: The case of COVID-19. *Social Media + Society*, 6(3), 1–12. <https://doi.org/10.1177/2056305120948255>

Nguyen, T. T., & Tan, G. (2022). Digital finance adoption and saving behavior among millennials in Vietnam. *Journal of Asian Finance, Economics and Business*, 9(4), 83–92. <https://doi.org/10.13106/jafeb.2022.vol9.no4.0083>

Nugroho, Y., & Fitriana, R. (2021). Financial literacy and digital banking in rural Indonesia. *Indonesian Journal of Economics and Finance*, 4(2), 73–88.

OECD. (2020). *OECD/INFE 2020 international survey of adult financial literacy*. OECD Publishing.

Paule-Paludkiewicz, H., Lueg, K., & Beck, T. (2020). The role of culture in household saving behavior: Evidence from immigrants. *Economics Letters*, 193, 109268. <https://doi.org/10.1016/j.econlet.2020.109268>

Pratama, Y., Rahmawati, A., & Nugroho, Y. (2020). Financial literacy and savings behavior in Indonesia: A provincial perspective. *Journal of Economics and Policy*, 13(3), 115–130. <https://doi.org/10.22219/jep.v13i3.12473>

Sarstedt, M., Diamantopoulos, A., Salzberger, T., & Baumgartner, H. (2016). Selecting single items to measure reflective constructs in organizational research. *Organizational Research Methods*, 19(4), 1–30. <https://doi.org/10.1177/1094428115624966>

Srisawatsakul, T., & Srisawatsakul, P. (2023). The impact of mobile banking usage on saving frequency in Thailand. *Asian Journal of Economic Modelling*, 11(2), 101–115. <https://doi.org/10.18488/ajem.v11i2.3161>

Trzcińska, A., Czerwonka, M., & Niewiadomski, P. (2022). Time perspective and saving behavior in children. *Journal of Economic Psychology*, 92, 102522. <https://doi.org/10.1016/j.joep.2022.102522>

van Deursen, A. J., & Helsper, E. J. (2015). The third-level digital divide: Who benefits most from being online? *Communication and Information Technologies Annual*, 10, 29–52. <https://doi.org/10.1108/S2050-206020150000010002>

Wang, L., Liang, X., & Sun, Y. (2022). Anthropomorphism of money and its effects on saving: Evidence from experimental studies. *Journal of Consumer Research*, 49(2), 293–311. <https://doi.org/10.1093/jcr/ucac018>

Wulandari, F., & Indrastuti, A. (2023). Fintech usage and literacy in rural Indonesia: Evidence from East Java. *Journal of Financial Inclusion Studies*, 6(1), 45–60.

Xie, C., & Chen, Y. (2024). Digital financial literacy and rural entrepreneurship in China: A moderating role of risk attitude. *China Economic Review*, 80, 102112. <https://doi.org/10.1016/j.chieco.2024.102112>