

Article

Digital financial literacy and household financial resilience: The mediating role of financial self-efficacy and the moderating role of AI literacy

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Keywords: AI literacy; digital financial
literacy; financial self-efficacy;
homemakers; household financial
resilience

Abstract

This study develops and empirically examines an integrated model linking digital financial literacy, artificial intelligence (AI) literacy, financial self-efficacy, and household financial resilience among Indonesian homemakers. Drawing on Social Cognitive Theory, the Technology Acceptance Model, and the Capability Approach, the study positions financial self-efficacy as a mediating mechanism and AI literacy as a moderating factor. A quantitative cross-sectional survey was conducted among 250 homemakers from Jakarta, Surabaya, Semarang, Palembang, and Makassar selected through purposive sampling. Data were analysed using Partial Least Squares Structural Equation Modelling with SmartPLS 4.0. The results demonstrate that digital financial literacy positively affects household financial resilience ($\beta = 0.412$, $p < 0.001$) and financial self-efficacy ($\beta = 0.378$, $p < 0.001$). Financial self-efficacy also positively influences household financial resilience ($\beta = 0.287$, $p < 0.001$) and partially mediates the relationship between digital financial literacy and financial resilience ($\beta = 0.109$, $p < 0.001$). Furthermore, AI literacy strengthens the relationship between digital financial literacy and financial self-efficacy ($\beta = 0.198$, $p = 0.002$). The model explains 67.3% of the variance in household financial resilience. These findings highlight that digital competencies must be accompanied by confidence and critical AI capabilities to strengthen household financial preparedness and adaptability. Practically, the findings support the design of inclusive financial education programs that combine digital financial skills, responsible AI use, privacy awareness, and confidence-building exercises. Such programs can help homemakers evaluate automated recommendations, manage household budgets more effectively, anticipate financial shocks, and make informed decisions without becoming overly dependent on technology.

Introduction

Digital transformation has fundamentally changed how households access financial services, conduct transactions, prepare budgets, and make financial decisions. Mobile banking, electronic wallets, digital lending, investment platforms, and automated financial applications have made financial services increasingly accessible while simultaneously exposing users to complex products, cybersecurity threats, misleading information, and impulsive financial behavior. These developments require households to possess not only conventional financial knowledge but also the ability to evaluate and use digital financial services safely and strategically (Kass-Hanna et al., 2021; Rahayu et al., 2024).

Within Indonesian households, women frequently assume primary responsibility for budgeting, daily expenditure, debt payments, savings, and emergency financial preparation. Housewives therefore occupy a strategically important position because their financial decisions directly affect household consumption, financial stability, and family welfare. Previous research in Indonesia indicates that financial literacy improves the financial management practices of housewives, while targeted financial education can strengthen their ability to allocate income and control household expenditure (Andrianingsih & Laras Asih, 2022; Hikmah et al., 2022). Financial competence among women also improves their participation and bargaining position in intra-household financial decision-making (Banerjee et al., 2021).

Indonesia has made substantial progress in expanding financial literacy and access to formal financial services. Nevertheless, national survey results continue to reveal a discrepancy between

individuals' access to financial products and their capacity to understand and use them effectively. Table 1 presents the development of Indonesia's financial literacy and financial inclusion indices.

Table 1. Financial Literacy and Financial Inclusion Indices in Indonesia

Survey year	Financial literacy index (%)	Financial inclusion index (%)	Literacy–inclusion gap (percentage points)
2019	38.03	76.19	38.16
2022	49.68	85.10	35.42
2024	65.43	75.02	9.59

Source: *Otoritas Jasa Keuangan (2020, 2022) and Otoritas Jasa Keuangan and Badan Pusat Statistik (2024). The 2024 survey was the first SNLIK jointly conducted by OJK and BPS; comparisons across survey years should therefore be interpreted with consideration of methodological development. ojk.go.id*

The financial literacy index increased from 38.03 percent in 2019 to 65.43 percent in 2024, indicating a considerable improvement in financial knowledge, skills, confidence, attitudes, and behavior. However, the persistence of a literacy–inclusion gap shows that access to financial services does not necessarily ensure an adequate understanding of their benefits, costs, risks, and long-term consequences. This distinction is important because financially included households may remain vulnerable when they use digital services without sufficient competence to compare products, protect personal data, manage debt, or prepare for economic shocks (Otoritas Jasa Keuangan, 2020, 2022; Otoritas Jasa Keuangan & Badan Pusat Statistik, 2024).

Digital financial literacy extends conventional financial literacy by integrating financial knowledge with the ability to navigate digital platforms, evaluate online financial information, recognize digital risks, and use technology to support sound financial decisions. It involves more than the technical ability to operate a financial application because users must also understand product characteristics, interest and fee structures, privacy protection, digital fraud, and the consequences of financial decisions. Empirical evidence demonstrates that digital financial literacy contributes to improved financial decision-making and financial well-being, particularly among women and households using technology-based financial services (Mishra et al., 2024; Rahayu et al., 2024).

The practical benefits of digital access may remain limited when financial applications are used primarily for routine transactions rather than financial planning. Research involving Indonesian housewives found that digital financial applications were frequently used for payments and transfers but were less extensively employed for budgeting, debt management, financial evaluation, and long-term planning. Limited knowledge and insufficient training were identified as important barriers preventing housewives from fully utilizing digital financial tools (Sutanto et al., 2025). These findings suggest that access to smartphones and financial applications cannot, by itself, guarantee productive household financial management.

The importance of digital financial literacy becomes more pronounced when households face economic uncertainty. Financially literate women are generally better able to evaluate financial alternatives, maintain savings, manage household obligations, and protect their families from financial fragility. Women's financial literacy and financial independence were found to reduce household financial vulnerability during the COVID-19 pandemic, demonstrating their protective role during periods of economic disruption (Pepur et al., 2022). Household saving behavior in a digital environment is similarly influenced by individuals' financial knowledge, attitudes, perceived behavioral control, and ability to use digital financial services (Rahayu et al., 2024).

The rapid integration of artificial intelligence into financial services has introduced an additional competence requirement. AI-based financial services currently include chatbots, automated credit assessment, fraud-detection systems, robo-advisors, personalized budgeting recommendations, machine-learning-based expenditure analysis, and virtual financial assistants. Although these technologies can expand access to personalized financial guidance, they may also generate risks related to algorithmic bias, data privacy, inaccurate recommendations, and excessive dependence on automated systems (Aleksandrova et al., 2024).

AI literacy refers to an individual's ability to understand basic AI mechanisms, interact effectively with AI-based systems, critically evaluate their outputs, and recognize the ethical and social implications of their use. It combines technical awareness, critical judgment, confidence, ethical consideration, and reflective use rather than merely knowing that an application contains AI features (Chiu et al., 2024). In household finance, AI literacy may determine whether users accept automated recommendations uncritically or evaluate them according to their income, obligations, risk tolerance, and financial objectives.

The Technology Acceptance Model explains that individuals' willingness to adopt technology is shaped by their perceptions of its usefulness and ease of use (Davis, 1989). Within the present

research context, AI-literate housewives are expected to understand AI-based financial features more effectively, perceive greater benefits from those features, and feel more capable of using them. AI literacy may therefore strengthen the effect of digital financial literacy on users' confidence in managing household finances.

Despite its increasing importance, AI literacy has rarely been examined in the context of household financial management. Existing studies have mainly conceptualized AI literacy in educational, technological, and organizational settings, while research on financial technology has generally emphasized adoption, accessibility, security, and digital financial literacy. Consequently, limited empirical evidence explains whether AI literacy strengthens the capacity of housewives to transform digital financial knowledge into confidence and resilient financial behavior (Aleksandrova et al., 2024; Chiu et al., 2024).

Financial self-efficacy offers a psychological mechanism through which financial knowledge can be converted into financial action. Financial self-efficacy refers to an individual's belief in their capacity to plan, control, and make effective financial decisions. Social Cognitive Theory proposes that behavior is jointly influenced by personal cognition, environmental conditions, and beliefs about one's capability to perform particular actions (Bandura, 1986). Accordingly, two individuals with similar levels of financial knowledge may demonstrate different financial behaviors when their confidence in applying that knowledge differs.

Previous studies show that financial self-efficacy is positively associated with budgeting discipline, saving behavior, debt control, and financial management. Digital financial knowledge becomes more valuable when individuals feel sufficiently confident to apply it in real financial situations, whereas limited self-efficacy may prevent knowledgeable users from acting consistently. Financial self-efficacy can therefore mediate the relationship between digital financial literacy and financial outcomes by transforming knowledge into goal-oriented financial behavior (Setyorini et al., 2021; Sharma et al., 2026).

The proposed mediating role is also consistent with the Capability Approach. This perspective distinguishes access to resources from an individual's actual capability to convert those resources into valuable outcomes (Sen, 1999). Smartphones, internet access, digital financial applications, and financial information constitute resources, but their contribution to household welfare depends on users' capability to employ them effectively. Digital financial literacy and AI literacy expand the available capability set, while financial self-efficacy supports the conversion of these capabilities into decisions that strengthen household financial resilience.

Household financial resilience refers to the ability of a household to absorb financial shocks, meet current obligations, mobilize emergency resources, and recover without experiencing prolonged deterioration in living standards. Financial resilience involves more than income because households with similar income levels may possess different capacities to cope with unexpected expenses, employment disruption, illness, inflation, or debt pressure. Emergency savings, manageable debt, financial knowledge, access to reliable services, and adaptive financial behavior constitute important foundations of resilience (Kass-Hanna et al., 2021; Lusardi et al., 2021).

Digital financial literacy can strengthen resilience by helping households monitor expenditure, identify financial risks, accumulate emergency savings, compare financial products, and make timely decisions. Nevertheless, the influence of digital competence may depend on users' confidence and their ability to evaluate increasingly automated financial environments. Recent evidence indicates that digital financial capability and financial self-efficacy jointly contribute to financial resilience, but their interaction with AI literacy has not been adequately incorporated into household financial models (Fan et al., 2024; Sharma et al., 2026).

Previous studies consequently leave three important gaps. First, research has predominantly examined the direct relationship between financial literacy and financial behavior or well-being, providing limited explanation of the psychological process through which digital financial literacy develops into household financial resilience. Second, AI literacy has generally been investigated separately from financial literacy, despite the growing integration of AI into digital financial services. Third, few studies have simultaneously examined financial self-efficacy as a mediator and AI literacy as a moderator within a model focused specifically on housewives as household financial managers.

This study addresses these gaps by integrating Social Cognitive Theory, the Technology Acceptance Model, and the Capability Approach. Social Cognitive Theory explains financial self-efficacy as the mechanism connecting knowledge with action, the Technology Acceptance Model explains how AI literacy can strengthen confidence in using AI-enabled financial technologies, and the Capability Approach explains how digital resources are converted into household financial resilience (Bandura, 1986; Davis, 1989; Sen, 1999). This theoretical integration provides a more comprehensive explanation than models limited to the direct effect of financial literacy.

The novelty of this study lies in examining AI literacy as a boundary condition in the relationship between digital financial literacy and financial self-efficacy while simultaneously positioning financial

self-efficacy as a mechanism through which digital financial literacy influences household financial resilience. The model is tested among 250 housewives across five major Indonesian cities, thereby providing evidence from women who directly manage household financial decisions in an emerging digital economy. This study thus moves beyond the question of whether financial literacy matters and examines how and under what technological conditions it contributes to financial resilience.

Accordingly, this study aims to examine the effect of digital financial literacy on household financial resilience, evaluate the mediating role of financial self-efficacy, and determine whether AI literacy strengthens the relationship between digital financial literacy and financial self-efficacy. The findings are expected to extend the literature on household finance and women's economic empowerment while providing practical guidance for financial authorities, financial service providers, educational institutions, and community organizations in designing integrated financial capability programs for Indonesian housewives

Literature Review

Digital Financial Literacy. Digital financial literacy extends conventional financial literacy by incorporating the competencies required to access, understand, evaluate, and use technology-based financial products and services. It includes knowledge of digital financial products, practical skills in operating financial platforms, and the ability to assess the opportunities and risks associated with digital transactions. [Golden and Cordie \(2022\)](#) define digital financial literacy as the capacity to use digital technology to make informed financial decisions, including knowledge, technical competence, and critical awareness.

Digital financial literacy is broader than the ability to operate mobile banking or electronic wallets. [Jose and Ghosh \(2024\)](#) identify five principal dimensions: awareness of digital financial services, skills in using digital financial platforms, the ability to evaluate digital financial products, understanding of digital security and privacy, and the ability to make financial decisions using digital information. These dimensions indicate that digital financial literacy combines operational competence with critical financial judgment.

Digital financial literacy can influence financial behavior by improving individuals' ability to compare financial products, monitor expenditure, manage debt, prepare budgets, save consistently, and evaluate investment alternatives. [Mishra et al. \(2025\)](#) found that women's digital financial literacy positively affected investment decisions, saving behavior, and long-term financial planning. Similarly, [Jhonson et al. \(2023\)](#) showed that digital financial literacy improved financial well-being through better saving, investment, and expenditure-management behavior.

Evidence from Indonesia indicates that women increasingly use digital financial applications, although the depth of their use remains uneven. [Sutanto et al. \(2025\)](#) found that women who actively used digital financial applications demonstrated better budgeting and debt-management capabilities. However, these applications were more frequently used for routine payments and transfers than for financial evaluation and strategic planning. This finding suggests that high application usage does not necessarily represent a high level of digital financial capability.

Digital financial literacy is also associated with households' ability to prepare for and respond to economic disruption. [Rahayu et al. \(2024\)](#) demonstrated that digital financial literacy positively influenced saving behavior, which subsequently contributed to financial resilience. [Kass-Hanna et al. \(2021\)](#) similarly found that financial and digital literacy jointly strengthened financial inclusion and financial resilience in emerging economies in South Asia and Sub-Saharan Africa.

From the Capability Approach, digital access represents a resource, while digital financial literacy represents the capability to convert that resource into valuable financial outcomes ([Sen, 1999](#)). Access to smartphones, internet services, and financial applications will produce limited benefits when individuals cannot evaluate financial information or use digital tools to improve household financial decisions. Digital financial literacy is therefore expected to strengthen household financial resilience directly and indirectly through individuals' confidence in applying their financial capabilities.

Artificial Intelligence Literacy. Artificial intelligence literacy is an emerging construct that reflects individuals' ability to understand, use, monitor, and critically evaluate AI-based systems. AI literacy does not require users to possess advanced programming skills. Instead, it involves an understanding of how AI systems generate outputs, awareness of their limitations, the ability to communicate effectively with them, and sensitivity to ethical issues such as privacy, bias, transparency, and accountability ([Chiu et al., 2024](#)).

[Hackl et al. \(2026\)](#) conceptualize AI literacy through an AI Literacy Heptagon consisting of seven dimensions: technical understanding, practical use, creativity, critical evaluation, ethics,

empathy, and collaboration. This multidimensional perspective indicates that AI literacy encompasses more than operational competence because individuals must also assess whether AI-generated information is accurate, appropriate, ethical, and relevant to their circumstances.

The relevance of AI literacy has increased with the use of AI in personal financial services. AI-enabled financial technologies include automated budgeting systems, chatbots, robo-advisors, personalized saving recommendations, credit assessments, fraud detection, and expenditure analysis. Aleksandrova et al. (2024) argue that AI and technological innovation have reshaped digital financial decision-making in the post-COVID environment. Bernatska et al. (2025) further show that AI-based tools can enhance financial literacy by personalizing financial education and analyzing users' financial behavior.

The Technology Acceptance Model explains that technology adoption is influenced by perceived usefulness and perceived ease of use (Davis, 1989). Individuals who understand the functions and limitations of AI are more likely to perceive AI-based financial applications as manageable and useful. AI literacy may consequently increase users' willingness and confidence to employ AI-supported features in budgeting, saving, investment, and household financial planning.

Digital financial literacy and AI literacy represent distinct but complementary competencies. Digital financial literacy concerns the effective and responsible use of digital financial services, whereas AI literacy concerns the ability to understand and critically evaluate the automated systems embedded in those services. Takemeyang et al. (2025) found that digital financial literacy and AI-based digital financial adoption reinforced each other within the banking sector. This relationship suggests that individuals obtain greater benefits from digital financial knowledge when they can also interpret and evaluate AI-generated financial recommendations.

Evidence regarding the relationship between AI literacy and self-efficacy in financial contexts remains limited. Puspitasari and Wahyudi (2024) found that AI literacy positively influenced students' self-efficacy in technology-supported financial and accounting education. Fitri Yani and Kotova (2026) similarly reported that AI-supported economic knowledge and financial management practices increased learning engagement and self-efficacy. Seker et al. (2025) demonstrated that digital and data literacy played important roles in developing AI literacy, indicating that these technological competencies are interconnected.

AI literacy may also determine consumers' adoption of AI-enabled financial services. Gunawardena et al. (2025) found that customers' understanding of AI significantly influenced their adoption of AI-supported mobile banking. K. and Velmurugan (2025) identified digital and AI literacy as drivers of AI-based financial technology adoption among equity investors. Hesami (2025) nevertheless emphasizes that AI-driven personal finance creates both opportunities and consumer risks, making critical AI competence essential.

In this study, AI literacy is positioned as a moderating variable rather than a direct predictor of household financial resilience. Housewives with strong digital financial literacy may possess knowledge about budgeting, saving, and digital financial services, but their confidence in applying that knowledge through AI-enabled platforms may depend on their understanding of AI. AI literacy is therefore expected to strengthen the relationship between digital financial literacy and financial self-efficacy.

Financial Self-Efficacy. Financial self-efficacy refers to an individual's belief in their ability to organize and perform the actions required to achieve financial goals. The construct originates from Social Cognitive Theory, which explains that behavior is shaped by interactions among personal cognition, environmental conditions, and individuals' beliefs about their capabilities (Bandura, 1986). Self-efficacy influences whether individuals initiate a behavior, how much effort they invest, and whether they persist when facing difficulties.

Within household financial management, financial self-efficacy reflects confidence in preparing budgets, controlling expenditure, paying financial obligations, handling emergencies, managing debt, saving, and making investment decisions. Nguyen (2019) developed a financial self-efficacy measurement for women that incorporated confidence in financial planning, daily financial management, and investment decision-making. This gender-sensitive approach is relevant because women's financial confidence may be influenced by access to income, financial experience, household roles, and involvement in financial decisions.

Financial knowledge does not automatically result in responsible financial behavior. Individuals may understand the importance of saving or budgeting but fail to apply that knowledge when they lack confidence, perceive financial decisions as excessively difficult, or feel unable to control household finances. Setyorini et al. (2021) found that financial literacy and financial planning improved household financial resilience through changes in financial behavior. Financial self-efficacy can strengthen this process by encouraging individuals to translate knowledge into consistent action.

Empirical studies support the mediating function of financial self-efficacy. [Mulasi and Mathew \(2021\)](#) found that financial self-efficacy mediated the relationship between financial literacy and financial behavior. [Rai et al. \(2025\)](#) similarly demonstrated that financial self-efficacy transmitted the influence of financial literacy to financial well-being. [Korankye et al. \(2026\)](#) reported that financial education strengthened financial self-efficacy through an identifiable causal pathway.

For women and household financial managers, self-efficacy may be particularly important because financial decisions are made under income constraints, competing household needs, and uncertainty. [Rahmatika et al. \(2024\)](#) found that financial self-efficacy mediated the effects of financial literacy and financial attitudes on the financial management practices of housewives. [Kaur and Singh \(2024\)](#) further showed that family financial socialization influenced both financial self-efficacy and subsequent financial behavior.

Research across different social groups provides additional support for this mechanism. [Sabri et al. \(2022\)](#) demonstrated that financial self-efficacy and attitudes toward money mediated the relationship between financial literacy and household financial health in Malaysia. Gupta and Yadav (2026) found that financial self-efficacy helped convert financial capabilities into financial well-being among working women. [Chaity et al. \(2024\)](#) also showed that technical and financial capabilities altered the strength of the relationship between financial literacy and financial well-being.

Based on Social Cognitive Theory, digital financial literacy is treated as a cognitive resource, while financial self-efficacy represents an individual's belief in their capacity to apply that resource. Housewives with greater digital financial knowledge are expected to feel more capable of using financial applications, evaluating financial information, and addressing financial problems. Financial self-efficacy is therefore proposed as the mechanism through which digital financial literacy contributes to household financial resilience.

Household Financial Resilience. Household financial resilience refers to a household's capacity to withstand, respond to, and recover from financial shocks while maintaining essential consumption and long-term financial stability. Financial shocks may include income loss, unemployment, illness, unexpected expenditure, inflation, debt pressure, or broader economic crises. [Kamble et al. \(2025\)](#) identify three principal dimensions of financial resilience: the ability to absorb financial shocks, the capacity to recover, and the ability to adapt over the long term.

Financial resilience is broader than current income or wealth. Households with comparable income levels may possess different levels of resilience because they differ in emergency savings, debt obligations, insurance protection, financial knowledge, access to formal services, and financial behavior. [Lusardi et al. \(2021\)](#) demonstrate that financially literate individuals are better prepared for economic shocks because they are more likely to plan, save, diversify risks, and understand financial products.

Digital financial literacy may strengthen resilience by improving access to information, facilitating saving and budgeting, and supporting timely financial decisions. [Fan et al. \(2024\)](#) confirmed a positive relationship between financial literacy and household financial resilience. [Tyrell Curry \(2025\)](#) further conceptualized financial literacy, financial resilience, and emotional well-being as dynamically related outcomes that vary across demographic groups.

Studies conducted in Indonesia also indicate that household financial resilience is shaped by multiple financial and psychological resources. [Setyorini et al. \(2021\)](#) found that financial literacy and financial planning enhanced resilience through household financial behavior. [Hendri and Usman \(2023\)](#) showed that financial literacy, planning, self-efficacy, and income contributed to resilience among individuals experiencing a quarter-life crisis. [Pandin et al. \(2023\)](#) illustrated how households affected by cancer developed financial strategies to sustain consumption and cope with prolonged financial pressure.

International evidence reinforces the importance of combined financial and digital capabilities. [Kass-Hanna et al. \(2021\)](#) found that financial and digital literacy jointly contributed to financial inclusion and resilience in emerging markets. [Nguyen et al. \(2022\)](#), using a Mindsponge-based reasoning approach, demonstrated that financial knowledge, investment skills, and access to reliable financial information supported household resilience during the COVID-19 crisis. [Jalili et al. \(2025\)](#) similarly identified financial knowledge, preparedness, adaptive capacity, and access to support as important components of individual and household financial resilience.

The Capability Approach provides a useful framework for understanding these relationships because resilience depends on households' ability to convert available resources into effective financial functioning ([Sen, 1999](#)). Digital platforms, financial knowledge, and AI-based applications are resources, whereas the ability to maintain consumption, manage unexpected expenses, and recover from financial shocks represents achieved functioning. Financial self-efficacy facilitates this conversion by encouraging households to use their knowledge and resources actively.

In this study, household financial resilience is positioned as the final outcome of digital financial capability. Digital financial literacy is expected to improve resilience by enabling better decisions, while financial self-efficacy explains how that competence is translated into action. AI literacy is expected to strengthen this process by helping housewives use and evaluate increasingly automated financial services.

The Role of Housewives in Household Financial Management. Housewives frequently serve as the principal managers of household finances. Their responsibilities include allocating income, controlling daily expenditure, paying bills, managing debt, preparing savings, and balancing short-term household needs with longer-term financial objectives. Nasution et al. (2019) describe housewives as family financial managers whose decisions influence the stability and welfare of all household members.

Household financial decisions are not determined solely by formal financial knowledge. Cultural values, family trust, previous financial experiences, spousal relationships, and household power structures also influence how women manage money. Using a phenomenological approach, Nadhiroh and Mukhlis (2023) found that the financial management behavior of housewives was shaped by cultural meaning, family beliefs, and accumulated experience.

Women's financial decision-making is also influenced by risk preferences, investment confidence, and their degree of economic dependence. Dewanti and Viverita (2025) found that financial literacy among Indonesian housewives interacted with investment trust, risk appetite, and dependency status in shaping financial decisions. Higher literacy was associated with more proactive and independent financial behavior.

Financial education programs designed for housewives have demonstrated positive outcomes. Irna Eliyana et al. (2024) reported that digital financial literacy education improved participants' financial knowledge and digital financial practices. Suparyati et al. (2025) similarly found that financial management training improved housewives' ability to separate household and microbusiness finances and prepare simple financial reports.

Improving women's financial capability also affects household power relations and vulnerability. Banerjee et al. (2021) found that financially literate women possessed greater influence in intra-household financial decision-making. Pepur et al. (2022) showed that women's financial literacy, economic participation, and financial independence reduced household financial fragility during the COVID-19 pandemic. In rural settings, financial education can also strengthen women's autonomy and household bargaining capacity, although structural and sociocultural barriers may limit its effects (Gazo Cárdenas et al., 2026).

Housewives constitute an important research population because they frequently manage household finances without necessarily receiving formal financial education. The integration of digital financial literacy, AI literacy, and financial self-efficacy may provide them with the knowledge, technological judgment, and confidence required to improve household financial resilience. Studying these relationships is therefore relevant not only to personal finance but also to women's economic empowerment and household-level economic development.

Theoretical Integration and Research Model. This study integrates Social Cognitive Theory, the Technology Acceptance Model, and the Capability Approach to explain the formation of household financial resilience. Social Cognitive Theory explains that financial self-efficacy connects financial knowledge with action because individuals are more likely to apply their knowledge when they believe they can successfully perform the required financial behaviors (Bandura, 1986). The Technology Acceptance Model explains how AI literacy may increase perceived usefulness, reduce perceived complexity, and strengthen confidence in using AI-enabled financial applications (Davis, 1989). The Capability Approach explains how access to digital resources and knowledge can be converted into household financial functioning and resilience (Sen, 1999).

Within this integrated framework, digital financial literacy functions as a cognitive and practical capability that enables housewives to navigate digital financial environments. Financial self-efficacy functions as the psychological mechanism that converts competence into financial behavior and resilience. AI literacy functions as a boundary condition that strengthens the effect of digital financial literacy on financial self-efficacy by enabling users to understand and critically evaluate AI-supported financial services.

The literature therefore supports the expectation that digital financial literacy directly enhances household financial resilience and increases financial self-efficacy. Financial self-efficacy is expected to improve resilience and mediate the relationship between digital financial literacy and household financial resilience. Furthermore, AI literacy is expected to strengthen the positive relationship between digital financial literacy and financial self-efficacy. This model addresses the

limited integration of financial, technological, and psychological capabilities in previous household finance research.

Methods

Research Design and Model Specification. This study employed a quantitative, cross-sectional survey design to examine the relationships among digital financial literacy, AI literacy, financial self-efficacy, and household financial resilience. Partial Least Squares Structural Equation Modeling (PLS-SEM) was selected because the research model involves multiple latent constructs, mediation and moderation effects, and an emphasis on explaining household financial resilience (Hair et al., 2022).

The model consisted of four constructs. Digital financial literacy was specified as the exogenous variable, financial self-efficacy as the mediating variable, AI literacy as the moderating variable, and household financial resilience as the endogenous variable. The model examined five structural relationships: the effects of digital financial literacy on household financial resilience and financial self-efficacy, the effect of financial self-efficacy on household financial resilience, the indirect effect of digital financial literacy on household financial resilience through financial self-efficacy, and the moderating effect of AI literacy on the relationship between digital financial literacy and financial self-efficacy.

The specification of the model was informed by Social Cognitive Theory, the Technology Acceptance Model, and the Capability Approach. Social Cognitive Theory explains financial self-efficacy as a psychological mechanism through which financial knowledge is translated into action (Bandura, 1986). The Technology Acceptance Model supports the role of AI literacy in strengthening individuals' confidence in using AI-enabled financial services (Davis, 1989). The Capability Approach explains how digital knowledge and technological resources are converted into financial functioning and household resilience (Sen, 1999).

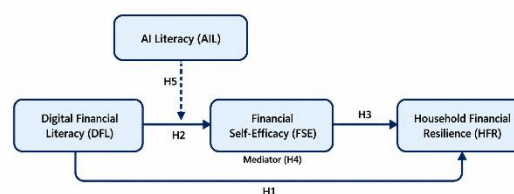


Fig 1.
Proposed Research Model

The following hypotheses were tested:

- H1: Digital financial literacy has a positive effect on household financial resilience.
- H2: Digital financial literacy has a positive effect on financial self-efficacy.
- H3: Financial self-efficacy has a positive effect on household financial resilience.
- H4: Financial self-efficacy mediates the relationship between digital financial literacy and household financial resilience.
- H5: AI literacy positively moderates the relationship between digital financial literacy and financial self-efficacy, such that the relationship becomes stronger at higher levels of AI literacy.

Population and Sample. The target population consisted of Indonesian housewives who were involved in managing their household finances and had experience using digital financial applications. Because a complete sampling frame for this population was unavailable, purposive sampling combined with city-based quotas was employed.

The study involved 250 respondents from five major Indonesian cities: Jakarta, Surabaya, Semarang, Palembang, and Makassar. Each city contributed 50 respondents, ensuring a balanced geographical distribution across the selected study locations.

Respondents were required to meet the following inclusion criteria: A housewife between 25 and 55 years of age; Primarily or jointly responsible for managing household finances; In possession of a smartphone and internet access; Had used at least one digital financial application within the preceding three months; and voluntarily agreed to participate in the study. Digital financial applications included mobile banking, electronic wallets, digital payment services, online investment applications, digital lending platforms, and other applications used for financial transactions or household financial management. Responses that did not meet the inclusion criteria or contained incomplete and inconsistent information were excluded from the analysis.

Research Instrument and Construct Measurement. Data were collected using a structured questionnaire consisting of five sections. The first section recorded respondents' demographic

characteristics, including age, educational attainment, employment status, household income, and location. The remaining sections measured the four latent constructs included in the research model.

Table 2. Measurement of Research Constructs

Construct	Operational definition	Number of items	Adapted sources
Digital financial literacy	The ability to understand, evaluate, and use digital financial services for transactions, budgeting, saving, planning, and financial decision-making	15	Sharma et al. (2026); Yogi (2024)
AI literacy	The ability to understand, use, monitor, and critically evaluate AI-enabled systems, including awareness of their limitations and ethical implications	12	Chiu et al. (2024); Hackl et al. (2026)
Financial self-efficacy	An individual's confidence in planning, controlling, and making effective household financial decisions	10	Nguyen (2019); Sabri et al. (2022)
Household financial resilience	The household's capacity to absorb, respond to, and recover from financial shocks while maintaining essential financial stability	12	Lusardi et al. (2021); Fan et al. (2024)

All items were measured using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The items were adapted to the context of Indonesian housewives and household financial management. Digital financial literacy items assessed knowledge and use of digital financial products, budgeting applications, transaction security, privacy protection, and digital financial decision-making. AI literacy items assessed understanding of AI functions, ability to interact with AI-enabled services, critical evaluation of AI-generated recommendations, and awareness of privacy, bias, and ethical risks.

Financial self-efficacy items measured respondents' confidence in preparing budgets, controlling expenditure, managing debt, maintaining savings, addressing unexpected expenses, and making financial decisions. Household financial resilience items evaluated the household's ability to meet financial obligations, maintain emergency resources, manage income disruption, adjust expenditure, and recover from financial shocks. The reliability coefficients reported in the empirical results were obtained from the final measurement-model evaluation and are therefore presented in the Results section rather than treated as predetermined characteristics of the instrument.

Data Analysis. The data were analyzed using PLS-SEM with SmartPLS 4. The analysis was conducted in two stages: measurement-model evaluation and structural-model evaluation.

The measurement model was evaluated to determine the reliability and validity of the constructs. Indicator reliability was assessed using outer loadings, with values of at least 0.708 preferred. Internal consistency reliability was evaluated using Cronbach's alpha, ρ_A , and composite reliability, with acceptable values ranging from 0.70 to 0.95. Convergent validity was established when the average variance extracted exceeded 0.50. Discriminant validity was evaluated using the heterotrait-monotrait ratio, with values below 0.85 indicating that the constructs were empirically distinct (Hair et al., 2022).

The structural model was evaluated after the measurement model satisfied the reliability and validity requirements. Collinearity among the predictor constructs was assessed using the variance inflation factor. The explanatory power of the model was evaluated through the coefficient of determination (R^2), while predictive relevance was assessed using the Stone–Geisser Q^2 value. Effect sizes (f^2) were examined to determine the contribution of each predictor to the endogenous constructs.

The significance of the structural relationships was tested through a bootstrapping procedure using 5,000 subsamples. The evaluation included standardized path coefficients, t-statistics, p-values, and confidence intervals. A relationship was considered statistically significant when the p-value was below 0.05 and the confidence interval did not include zero.

The mediating effect of financial self-efficacy was examined using the specific indirect effect of digital financial literacy on household financial resilience. Mediation was supported when the indirect effect was statistically significant. Partial mediation was identified when both the direct and indirect effects remained significant, whereas full mediation was identified when the indirect effect was significant but the direct effect was not.

The moderating effect of AI literacy was tested by estimating the interaction term between digital financial literacy and AI literacy. A positive and statistically significant interaction coefficient indicated that higher AI literacy strengthened the effect of digital financial literacy on financial self-

efficacy. The interaction was interpreted by comparing the relationship at lower and higher levels of AI literacy.

Result and Discussion

Respondent Characteristics. A total of 300 questionnaires were distributed across Jakarta, Surabaya, Semarang, Palembang, and Makassar. After the screening and data-cleaning process, 250 questionnaires met the inclusion and completeness criteria and were retained for analysis, resulting in a usable response rate of 83.3 percent.

Respondents were distributed across four age groups. The largest group consisted of respondents aged 31–35 years, accounting for 28.4 percent of the sample, followed by those aged 36–40 years at 25.6 percent. Respondents aged 41–55 years represented 24.4 percent, while those aged 25–30 years accounted for 21.6 percent. This distribution indicates that the sample included housewives from different stages of adulthood and household financial responsibility.

Regarding educational attainment, 44.0 percent of respondents held a bachelor's degree, 24.8 percent had completed senior high school, 20.0 percent held a diploma, and 11.2 percent had postgraduate qualifications. In terms of employment, 59.2 percent were full-time housewives, while 22.0 percent worked part-time and 18.8 percent worked full-time while remaining responsible for household financial management.

The most frequently reported monthly household income was IDR 5–10 million, representing 41.6 percent of respondents. Meanwhile, 23.2 percent reported a monthly household income below IDR 5 million, 21.2 percent earned IDR 10–15 million, and 14.0 percent reported an income exceeding IDR 15 million. The complete demographic profile is presented in Table 3.

Table 3. Demographic Characteristics of Respondents

Characteristic	Category	Frequency	Percentage (%)
Age	25–30 years	54	21.6
	31–35 years	71	28.4
	36–40 years	64	25.6
	41–55 years	61	24.4
Educational attainment	Senior high school or equivalent	62	24.8
	Diploma	50	20.0
	Bachelor's degree	110	44.0
	Postgraduate degree	28	11.2
Employment status	Full-time housewife	148	59.2
	Part-time employee	55	22.0
	Full-time employee	47	18.8
Monthly household income	Below IDR 5 million	58	23.2
	IDR 5–10 million	104	41.6
	IDR 10–15 million	53	21.2
	Above IDR 15 million	35	14.0
Total		250	100.0

Source: Survey data processed by the authors (2026).

Measurement Model Assessment. The measurement model was evaluated by examining indicator reliability, internal consistency reliability, convergent validity, and discriminant validity. All retained indicators had outer loadings above 0.70, demonstrating that each indicator adequately represented its respective construct.

Internal consistency reliability was established through Cronbach's alpha and composite reliability. Cronbach's alpha values ranged from 0.876 to 0.904, while composite reliability values ranged from 0.897 to 0.926. All values exceeded the recommended minimum threshold of 0.70, indicating satisfactory internal consistency across the four constructs.

Convergent validity was evaluated using the average variance extracted. The AVE values ranged from 0.512 to 0.587, exceeding the minimum requirement of 0.50. Therefore, each construct explained more than half of the variance in its indicators. Household financial resilience had the highest AVE and composite reliability, with respective values of 0.587 and 0.926. AI literacy recorded the lowest AVE at 0.512, although this value remained above the acceptable threshold. Overall, the results confirmed that the measurement model achieved adequate reliability and convergent validity.

Table 4. Measurement Model Evaluation

Construct	AVE	Composite reliability	Cronbach's alpha	Assessment
Digital financial literacy	0.548	0.912	0.892	Reliable and valid
AI literacy	0.512	0.897	0.876	Reliable and valid
Financial self-efficacy	0.563	0.907	0.881	Reliable and valid
Household financial resilience	0.587	0.926	0.904	Reliable and valid

Source: SmartPLS output processed by the authors (2026).

Discriminant validity was examined using the heterotrait-monotrait ratio. All HTMT values were below the threshold of 0.85, indicating that the four constructs were empirically distinct. Digital financial literacy, AI literacy, financial self-efficacy, and household financial resilience therefore measured conceptually different phenomena despite their theoretical relationships. Based on the combined evaluation of outer loadings, AVE, composite reliability, Cronbach's alpha, and HTMT, the measurement model satisfied the required reliability and validity criteria. Structural-model evaluation could therefore be conducted.

Structural Model Assessment. The structural model explained 67.3 percent of the variance in household financial resilience, as indicated by an (R^2) value of 0.673. This result shows that digital financial literacy and financial self-efficacy jointly provided substantial explanatory power for differences in household financial resilience among the respondents.

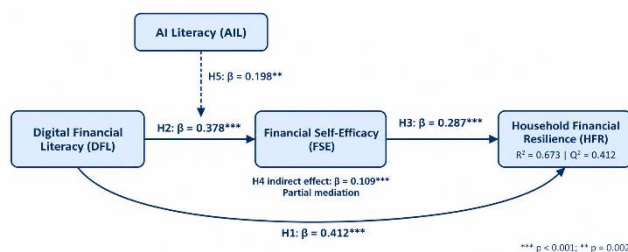
The Stone–Geisser (Q^2) value for household financial resilience was 0.412. Because this value was greater than zero, the model demonstrated predictive relevance for the endogenous construct. The combination of $R^2=0.673$ and $Q^2=0.412$ indicates that the proposed model possessed meaningful explanatory and predictive capacity.

The significance of the structural relationships was assessed using bootstrapping with 5,000 subsamples. Table 5 presents the standardized path coefficients, t-statistics, p-values, and hypothesis-testing decisions.

Table 5. Structural Model and Hypothesis-Testing Results

Hypothesis	Structural relationship	Standardized coefficient	t-statistic	p-value	Decision
H1	Digital financial literacy → Household financial resilience	0.412	8.234	<0.001	Supported
H2	Digital financial literacy → Financial self-efficacy	0.378	7.156	<0.001	Supported
H3	Financial self-efficacy → Household financial resilience	0.287	5.892	<0.001	Supported
H4	Financial self-efficacy → Digital financial literacy → Household financial resilience	0.109	4.211	<0.001	Supported
H5	Digital financial literacy × AI literacy → Financial self-efficacy	0.198	3.847	0.002	Supported

Source: SmartPLS bootstrapping results processed by the authors (2026).

**Fig. 2.** Structural Model Results

Direct Effects. The results supported the direct effect of digital financial literacy on household financial resilience. The relationship was positive and statistically significant $\beta = 0.412$, $t = 8.234$, $p < 0.001$, providing support for H1. Among the direct relationships predicting household financial resilience, digital financial literacy produced the largest standardized coefficient.

Digital financial literacy also had a positive and statistically significant effect on financial self-efficacy $\beta = 0.378$, $t = 7.156$, $p < 0.001$. Therefore, H2 was supported. The positive coefficient

indicates that respondents with higher digital financial literacy tended to report greater confidence in their ability to manage household finances.

Financial self-efficacy had a positive and significant effect on household financial resilience $\beta = 0.287$, $t = 5.892$, $p < 0.001$, supporting H3. The result indicates that greater confidence in managing household finances was associated with a stronger capacity to cope with financial pressures and maintain household financial stability.

Mediating Effect of Financial Self-Efficacy. The specific indirect effect of digital financial literacy on household financial resilience through financial self-efficacy was positive and statistically significant $\beta = 0.109$, $t = 4.211$, $p < 0.001$. The result provided support for H4 and confirmed that financial self-efficacy transmitted part of the influence of digital financial literacy to household financial resilience.

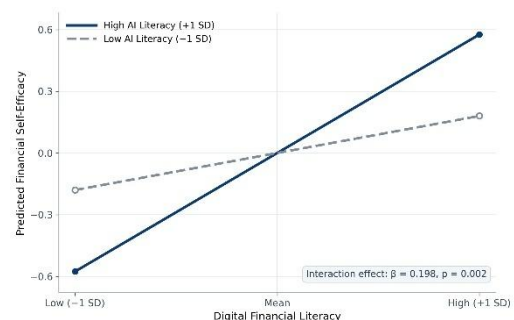
The direct effect of digital financial literacy on household financial resilience remained significant after the mediator was incorporated into the model. Consequently, financial self-efficacy performed a partial mediating role. This finding means that digital financial literacy affected household financial resilience through two pathways: a direct pathway and an indirect pathway operating through financial self-efficacy.

The total estimated effect of digital financial literacy on household financial resilience was 0.521, comprising the direct effect of 0.412 and the indirect effect of 0.109. The indirect effect accounted for approximately 20.9 percent of the total effect. Thus, financial self-efficacy represented a meaningful psychological mechanism, although most of the total effect remained attributable to the direct pathway.

Moderating Effect of AI Literacy. The interaction between digital financial literacy and AI literacy had a positive and statistically significant effect on financial self-efficacy $\beta = 0.198$, $t = 3.847$, $p = 0.002$. Therefore, H5 was supported.

The positive interaction coefficient indicates that AI literacy strengthened the relationship between digital financial literacy and financial self-efficacy. Digital financial literacy was more strongly associated with financial confidence among respondents possessing higher levels of AI literacy. Conversely, the relationship was comparatively weaker among respondents with lower AI literacy. This result demonstrates that AI literacy functioned as an enhancing moderator. Respondents' understanding and critical use of AI-enabled systems increased their capacity to translate digital financial knowledge into confidence in managing household finances.

Fig 3.
Moderating Effect of AI Literacy on the Relationship Between Digital Financial Literacy and Financial Self-Efficacy



Overall, all five hypotheses were supported. The results established significant direct effects of digital financial literacy and financial self-efficacy on household financial resilience, confirmed the partial mediating role of financial self-efficacy, and demonstrated that AI literacy strengthened the relationship between digital financial literacy and financial self-efficacy.

Discussion

Digital Financial Literacy and Household Financial Resilience. The results demonstrate that digital financial literacy had a positive and significant effect on household financial resilience $\beta = 0.412$, $t = 8.234$, $p < 0.001$. Digital financial literacy produced the largest direct coefficient among the relationships predicting financial resilience, indicating that the ability to understand and use digital financial services constituted an important resource for maintaining household financial stability.

This finding supports the Capability Approach, which distinguishes access to resources from the actual ability to convert those resources into valuable outcomes (Sen, 1999). Smartphones, internet connectivity, and digital financial applications provide households with technological resources, but these resources will not automatically improve their financial condition. Housewives

must be capable of evaluating financial information, comparing products, protecting personal data, planning expenditure, and using digital services according to household objectives. Digital financial literacy therefore represents a capability that allows technological access to be converted into more resilient household financial functioning.

The result is consistent with Kass-Hanna et al. (2021), who found that financial and digital literacy jointly strengthened financial inclusion and resilience in emerging economies. It also supports Rahayu et al. (2024), who demonstrated that digital financial literacy encouraged household saving behavior and contributed to financial preparedness. Digital competence allows users to monitor expenditure, organize savings, access information, and respond more quickly when financial conditions change.

The significant direct effect also confirms the findings of Fan et al. (2024), who identified financial literacy as an important predictor of household financial resilience. Jhonson et al. (2023) similarly reported that digital financial literacy improved financial well-being through saving, investment, and expenditure-management behavior. In the context of Indonesian housewives, this relationship is particularly important because they frequently control daily household expenditure and determine how limited financial resources are allocated.

However, digital financial literacy should not be equated with the frequency of digital application use. Sutanto et al. (2025) found that Indonesian women frequently used financial applications for routine transactions but made less extensive use of their budgeting, debt-management, and planning functions. The present result suggests that resilience depends on the quality and strategic purpose of digital financial use rather than merely the number of transactions conducted through digital platforms.

Thus, digital financial literacy strengthens household financial resilience by enabling housewives to make more informed, secure, and adaptive financial decisions. The finding extends the literature by demonstrating that its contribution remains significant even after financial self-efficacy is incorporated into the model.

Digital Financial Literacy and Financial Self-Efficacy. Digital financial literacy had a positive and significant effect on financial self-efficacy $\beta = 0.378$, $t = 7.156$, $p < 0.001$. This result indicates that respondents who possessed greater knowledge and skills in using digital financial services also demonstrated stronger confidence in managing household finances.

Social Cognitive Theory provides the principal explanation for this relationship. According to Bandura (1986), self-efficacy develops through mastery experiences, observation, social persuasion, and the interpretation of emotional responses. When housewives successfully use digital financial applications to prepare budgets, monitor expenditure, transfer funds, save, or compare financial products, these successful experiences strengthen their belief that they can manage financial tasks effectively.

Digital financial literacy also reduces the uncertainty associated with technology-based financial decisions. Users who understand the functions, benefits, fees, and risks of digital financial products are more likely to perceive financial tasks as manageable. Conversely, limited knowledge can produce anxiety, avoidance, and dependence on other family members when financial decisions involve unfamiliar digital platforms.

The finding is consistent with Setyorini et al. (2021), who demonstrated that financial knowledge and planning capabilities contributed to more effective household financial behavior. It also corresponds with Sharma et al. (2026), who found that financial self-efficacy constituted an important mechanism connecting digital financial literacy with financial management behavior and financial well-being.

The result provides additional evidence that financial literacy contains both cognitive and psychological components. Knowledge enables individuals to identify appropriate financial actions, while self-efficacy determines whether they feel capable of performing those actions. Digital financial education should therefore be designed to provide opportunities for practical application rather than being limited to the transfer of conceptual information. Accordingly, digital financial literacy strengthens financial self-efficacy because knowledge and successful interaction with digital financial tools reduce uncertainty and create mastery experiences. Among housewives, this confidence is essential because household financial decisions must often be made repeatedly under income constraints and competing family needs.

Financial Self-Efficacy and Household Financial Resilience. Financial self-efficacy positively affected household financial resilience $\beta = 0.287$, $t = 5.892$, $p < 0.001$. Respondents who were more confident in their ability to budget, control expenditure, save, manage debt, and address unexpected financial demands reported greater household resilience.

This finding is consistent with Social Cognitive Theory, which proposes that capability beliefs influence individuals' effort, persistence, and response to difficulties (Bandura, 1986). Financially confident individuals are more likely to maintain budgeting and saving behavior when household resources are limited. They are also more likely to evaluate alternatives, adjust expenditure, and seek appropriate financial solutions when facing financial shocks.

The result supports Rahmatika et al. (2024), who found that financial self-efficacy contributed to the financial management behavior of housewives. Sabri et al. (2022) similarly demonstrated that self-efficacy and attitudes toward money improved household financial health. These findings show that the psychological belief that one can manage financial problems has practical consequences for household preparedness and recovery. Financial self-efficacy is especially relevant during periods of financial pressure. Households may possess financial information and access to formal services but remain vulnerable when the financial manager lacks confidence in making adjustments. High self-efficacy supports active coping behavior, such as reducing nonessential expenditure, renegotiating obligations, mobilizing savings, and seeking reliable financial information.

The result also complements the findings of Lusardi et al. (2021), who showed that financial knowledge improved individuals' preparedness for financial shocks. The present study adds that knowledge is more likely to support resilience when household financial managers believe that they can use it effectively. Financial self-efficacy therefore functions as an active psychological resource rather than merely a perception of competence. Consequently, household financial resilience is influenced not only by financial resources and knowledge but also by confidence in managing those resources. Programs intended to strengthen household resilience should therefore combine financial knowledge with practical exercises that build confidence through experience.

The Mediating Role of Financial Self-Efficacy. The indirect effect of digital financial literacy on household financial resilience through financial self-efficacy was positive and significant $\beta = 0.109$, $t = 4.211$, $p < 0.001$. Because the direct effect remained significant after the mediator was introduced, financial self-efficacy performed a partial mediating role. The indirect pathway accounted for approximately 20.9 percent of the total effect of digital financial literacy on household financial resilience.

This result demonstrates that digital financial literacy influences resilience through both a capability pathway and a psychological pathway. The direct pathway indicates that digital knowledge and skills immediately support financial management. The indirect pathway indicates that these competencies also strengthen confidence, which then encourages more persistent and adaptive financial behavior.

The finding provides empirical support for Social Cognitive Theory because financial knowledge did not operate independently from individuals' beliefs about their capacity to act (Bandura, 1986). Digital financial literacy supplied the knowledge and skills required for financial management, while financial self-efficacy supported the application of those competencies in real household situations. The result is consistent with Mulasi and Mathew (2021), who found that financial self-efficacy mediated the relationship between financial literacy and financial behavior. Rai et al. (2025) similarly demonstrated that self-efficacy transmitted the influence of financial literacy to financial well-being. Korankye et al. (2026) further showed that financial education can improve financial outcomes by strengthening individuals' confidence in performing financial tasks.

The partial nature of the mediation is theoretically meaningful. Digital financial literacy continued to affect resilience directly, meaning that certain benefits arise from knowledge and skills regardless of changes in self-efficacy. For example, understanding digital security, interest rates, fees, and budgeting features can immediately reduce poor financial decisions. Nevertheless, a portion of its influence depends on whether users feel sufficiently confident to apply that knowledge consistently.

This mediation mechanism extends previous studies by demonstrating how digital financial competence is transformed into household resilience among Indonesian housewives. The evidence indicates that literacy programs should not stop after participants understand digital financial concepts. Programs should also develop mastery through guided simulations, budgeting practice, application-based saving plans, and exercises for evaluating financial products.

The Moderating Role of AI Literacy. AI literacy positively moderated the relationship between digital financial literacy and financial self-efficacy $\beta = 0.198$, $t = 3.847$, $p = 0.002$. The positive interaction indicates that digital financial literacy produced a stronger effect on financial self-efficacy among respondents with higher AI literacy. Therefore, AI literacy functioned as an enhancing moderator.

The Technology Acceptance Model helps explain this finding. Technology adoption depends on perceived usefulness and perceived ease of use (Davis, 1989). Housewives who understand how AI-based systems operate are more likely to recognize their potential usefulness and feel

capable of using them. In contrast, users with limited AI literacy may experience uncertainty regarding automated recommendations, data processing, and the reliability of AI-generated information.

The finding supports Chiu et al. (2024), who conceptualize AI literacy as a combination of understanding, practical competence, critical evaluation, ethical awareness, and reflective judgment. These capabilities help users interact with AI-based financial services without accepting automated outputs uncritically. AI-literate users can assess whether a recommendation is relevant to their income, obligations, risk tolerance, and household priorities.

The result is also consistent with Aleksandrova et al. (2024), who argue that AI and technological innovation increasingly shape financial decision-making. Gunawardena et al. (2025) found that customers' understanding of AI influenced their adoption of AI-enabled mobile banking, while K. and Velmurugan (2025) identified digital and AI literacy as important drivers of AI-based financial technology adoption. These studies indicate that technological understanding reduces psychological barriers to financial technology use.

The positive moderation effect also advances the existing literature because AI literacy was not simply treated as another direct predictor. Instead, it changed the strength of the relationship between digital financial competence and confidence. Housewives with comparable levels of digital financial literacy may therefore experience different levels of financial self-efficacy depending on their capacity to understand and evaluate AI.

Nevertheless, the role of AI literacy should not be interpreted as unconditional trust in automated technology. Critical AI literacy includes awareness of algorithmic limitations, privacy risks, potential bias, and inaccurate recommendations. Financial confidence should arise from informed and critical use rather than dependence on automated systems. Thus, AI literacy operates as a technological amplifier that helps housewives convert digital financial knowledge into confidence. This finding constitutes the principal theoretical contribution of the study because it introduces AI literacy as a boundary condition in the development of financial self-efficacy.

Explanatory and Predictive Capacity of the Integrated Model. The model explained 67.3 percent of the variance in household financial resilience $R^2 = 0.673$. The Stone–Geisser value of $Q^2 = 0.412$ further demonstrated that the model possessed predictive relevance. Together, these values indicate that the integration of digital financial literacy and financial self-efficacy provides a meaningful explanation of differences in household financial resilience.

The explanatory power of the model supports the Capability Approach because household resilience emerges from the interaction between resources, capabilities, and the ability to achieve valued financial outcomes (Sen, 1999). Digital financial literacy provides the competence to access and evaluate financial resources, financial self-efficacy enables their active application, and AI literacy strengthens confidence when financial services incorporate automated technologies.

The model also extends previous resilience research. Kass-Hanna et al. (2021) emphasize the complementary roles of financial and digital literacy, while Nguyen et al. (2022) highlight the importance of knowledge, investment skills, and access to reliable financial information during economic crises. The present model adds a psychological mechanism and a technological boundary condition to these explanations. All five hypotheses were supported, confirming that household financial resilience cannot be explained through financial literacy alone. Its development involves direct financial competence, confidence in applying that competence, and the ability to understand increasingly intelligent financial technologies.

Theoretical Contributions. This study offers three theoretical contributions. First, it extends digital financial literacy research by explaining both its direct effect on household financial resilience and its indirect effect through financial self-efficacy. The model therefore moves beyond a simple literacy–outcome relationship and identifies the psychological mechanism underlying that relationship.

Second, the study extends Social Cognitive Theory to the context of AI-enabled household financial management. Financial self-efficacy was empirically confirmed as a mechanism connecting digital financial competence with resilience. The results show that knowledge contributes more strongly to resilience when household financial managers possess confidence in their ability to apply it.

Third, the study introduces AI literacy as a moderator of the relationship between digital financial literacy and financial self-efficacy. Previous research has generally treated AI literacy as an educational or technological competence. This study demonstrates that it also functions as a contextual capability that strengthens the psychological benefits of digital financial knowledge.

The integration of Social Cognitive Theory, the Technology Acceptance Model, and the Capability Approach provides a more comprehensive explanation of household financial resilience.

The three perspectives explain, respectively, how confidence translates knowledge into behavior, how technological understanding supports AI-enabled financial adoption, and how resources are converted into meaningful financial outcomes.

Practical Implications. The findings indicate that financial education programs for housewives should integrate financial knowledge, practical digital skills, confidence-building activities, and critical AI literacy. Conventional financial training that focuses exclusively on budgeting and saving may be insufficient in an environment where household financial services increasingly rely on digital platforms and automated recommendations.

Financial authorities and educational institutions should provide practice-oriented training that allows participants to prepare digital budgets, assess financial products, recognize fraud, manage privacy settings, interpret AI-generated recommendations, and create emergency financial plans. Practical experience can simultaneously improve digital financial literacy and strengthen financial self-efficacy.

Financial service providers should design AI-enabled applications with clear explanations, transparent recommendations, accessible privacy controls, and user-friendly interfaces. AI-generated advice should explain the information used, the assumptions applied, and the limitations of the recommendation. These features can help users make independent decisions rather than becoming excessively dependent on automated systems.

Community organizations can also involve families in financial education because household decisions are rarely made by one individual in isolation. Strengthening the capabilities and decision-making position of housewives can improve not only individual competence but also the financial preparedness and stability of the entire household.

The study therefore indicates that household financial resilience in the AI era requires an integrated empowerment strategy. Digital financial literacy provides knowledge, financial self-efficacy converts that knowledge into action, and AI literacy strengthens users' confidence and critical judgment when interacting with intelligent financial systems.

Conclusion

This study confirms that digital financial literacy, AI literacy, and financial self-efficacy jointly contribute to strengthening the financial resilience of Indonesian housewives. Digital financial literacy has a significant direct effect on financial resilience ($\beta = 0.412$), ($p < 0.001$) and financial self-efficacy $\beta = 0.378$, $p < 0.001$, while financial self-efficacy positively influences financial resilience $\beta = 0.287$, $p < 0.001$ and partially mediates the relationship between digital financial literacy and financial resilience $\beta = 0.109$, $p < 0.001$. AI literacy also positively moderates the effect of digital financial literacy on financial self-efficacy $\beta = 0.198$, $p = 0.002$, indicating that the ability to understand and critically use AI strengthens women's confidence in applying digital financial knowledge. With the model explaining 67.3% of the variance in financial resilience, the findings demonstrate that expanding access to financial technology alone is insufficient; empowerment programs should integrate digital financial competencies, critical AI literacy, and confidence-building practices. Nevertheless, the purposive sampling method, cross-sectional design, and reliance on self-reported data limit causal and national generalization, requiring future studies to employ longitudinal designs, broader probability-based samples, and objective measures of financial behavior.

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