

INTEGRATION OF DIGITAL FINANCIAL LITERACY, ARTIFICIAL INTELLIGENCE (AI) ADOPTION, AND SELF-EFFICACY IN DRIVING PERSONAL FINANCIAL PLANNING (FIN533) AMONG UITM STUDENTS

Siti Maziah binti Ab Rahman ¹

¹ Faculty of Business and Management, Universiti Teknologi MARA (UiTM) Cawangan Kelantan, Malaysia
(Email: maziah650@kelantan.uitm.edu.my)

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Abstract: *This study aims to investigate the effects of integrating Digital Financial Literacy, Digital Adoption, Social Persuasion, and Artificial Intelligence (AI) Adoption on Personal Financial Performance among university undergraduate students and the youth generation in Malaysia. Aligned with the Personal Financial Planning (FIN533) curriculum, this study constructs a comprehensive conceptual framework by positioning Financial Self-Efficacy as a mediating variable. A quantitative research design was employed, utilizing a cross-sectional survey distributed to undergraduate students. Data analysis was executed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The conceptual framework is critically synthesized from recent high-impact Scopus and Web of Science (WoS) publication trends (2025–2026) within the domains of AI-driven education and financial governance. The expected empirical findings will contribute directly to the development of technology-integrated FIN533 instructional modules, while simultaneously offering practical, actionable strategies for financial and educational institutions to advance sustainable digital financial inclusion in Malaysia.*

Keywords: *Personal Financial Planning (FIN533), Digital Financial Literacy, Artificial Intelligence (AI), Self-Efficacy, PLS-SEM.*

Introduction

The landscape of personal financial management in the post-pandemic era has experienced a drastic paradigm shift, spurred by the rapid acceleration of the digital revolution and the systematic integration of intelligent systems (Bandura, 1997; Zakaria et al., 2025a). Conventional understandings of financial planning are no longer sufficient without a strong foundation in digital literacy and the capacity to utilize sophisticated, mobile-device-based financial applications (Lusardi & Mitchell, 2014; Robbins, 2024). Within higher education institutions, the Personal Financial Planning (FIN533) course plays a critical role in equipping undergraduate students with a holistic understanding of essential financial components, including cash flow management, tax planning, wealth accumulation, insurance, and retirement planning (Zakaria et al., 2025b). However, a widening gap has emerged between traditional academic financial theories and contemporary digital practices, demanding a comprehensive reassessment of the financial education ecosystem in Malaysia (Nadeson et al., 2026).

Based on a review of recent high-impact academic literature, variables such as artificial intelligence, social persuasion, and digital literacy have begun to dominate the scholarly discourse surrounding financial behavior, technological efficacy, and individual performance (Chen et al., 2024; Davis, 1989; Zakaria et al., 2025b). For instance, contemporary research investigating the intersection of digital transformation and financial capability underscores the absolute necessity of psychological drivers—most notably financial self-efficacy—as a core mechanism linking knowledge to positive behavioral execution (Altfest, 2023; Bandura, 1977). Furthermore, the readiness of university students to embrace and utilize artificial intelligence (AI) tools has been shown to strongly shape their competencies, technological confidence, and professional future-proofness (Lai et al., 2025). This provides a clear indication that AI elements must be actively integrated into the personal financial planning domain rather than treated as isolated technical tools (Venkatesh et al., 2003, 2012).

Consequently, this research paper seeks to address these critical updates by empirical means. The primary objective is to analyze the structural relationships among digital financial literacy, digital adaptation, social influence, and AI-driven practices in determining personal financial performance, while establishing financial self-efficacy as the primary underlying mediating mechanism (Hair et al., 2022; Syukur et al., 2026). In doing so, this study effectively updates the pedagogical relevance of the FIN533 syllabus, bringing it into alignment with automated modern wealth management and the socio-economic realities of Malaysian youth.

Literature Review and Hypotheses Development

Self-Efficacy Theory & Resource-Based View (RBV)

This study develops its theoretical foundation by synthesizing Bandura's Social Cognitive Theory—specifically Self-Efficacy Theory—with the strategic framework of the Resource-Based View (RBV) of the firm, adapted here to individual-level financial behavior (Bandura, 1977, 1997; Wernerfelt, 1984). In the context of personal financial management, digital financial literacy and technical digital capabilities act as critical "internal resources" owned by the individual (Barney, 1991). According to the RBV perspective, the mere possession of valuable and rare resources is insufficient to generate superior performance unless the entity possesses the organizational capability to deploy them effectively (Penrose, 1959). Within a psychological framework, this deployment capability is governed by financial self-efficacy—an individual's firm belief in their own capability to execute financial decisions (Compeau & Higgins, 1995a). Financial self-efficacy operates as the crucial psychological catalyst that

translates theoretical financial knowledge and digital access into proactive, dynamic saving, budgeting, and investment actions, mitigating technological anxiety and behavioral inertia (Gist & Mitchell, 1992; Lai et al., 2025).

Digital Financial Literacy, Digital Adoption, and Personal Financial Performance

Traditional financial literacy has historically focused on basic concepts such as the time value of money, compound interest arithmetic, and fundamental credit score management (Lusardi & Mitchell, 2014). However, within modern automated financial ecosystems, conventional literacy must be integrated with active digital adoption (Robbins, 2024; Zakaria et al., 2025b). The day-to-day administration of personal funds now relies heavily on online banking suites, digital wallets, automated budgetary trackers, and AI-driven robo-advisor investment platforms (Zimmerman, 2023). A failure or delay in adapting to these digital infrastructures excludes individuals from wealth accumulation streams and exacerbates vulnerability to sophisticated cyber-fraud and financial scams (Moore, 2023). Therefore, digital literacy directly enhance individual's confidence to operate financial tools, building robust self-efficacy which in turn secures optimized long-term financial performance (Compeau & Higgins, 1995b).

The Role of Artificial Intelligence (AI) in Financial Management

Artificial Intelligence (AI) has progressed beyond mere algorithmic automation to serve as an interactive, highly personalized digital companion (Russell & Norvig, 2020). AI assistants possess the capability to process spending histories, forecast upcoming cash flows, execute real-time portfolio rebalancing, and recommend cost-cutting strategies tailored to individual behavioral patterns (Davenport & Ronanki, 2018). In alignment with current studies examining AI tutors within Malaysian higher education, student readiness to navigate digital systems and overcome technology-induced anxiety determines whether the technological introduction yields positive performance outcomes (Lai et al., 2025; Zakaria et al., 2025a). In personal financial workflows, the structured adoption of AI helps minimize emotional biases (such as loss aversion and impulsive consumption) and maximizes budget precision, thereby structurally augmenting the individual's sense of financial control and competence (Kahneman, 2011; Thaler, 2015).

Proposed Conceptual Framework and Hypotheses

Based on the synthesized literature and theoretical intersections, the following research hypotheses are proposed for empirical testing:

- H1:** Digital Financial Literacy exerts a significant positive effect on Financial Self-Efficacy.
- H2:** Artificial Intelligence (AI) Adoption exerts a significant positive effect on Financial Self-Efficacy.
- H3:** Social Persuasion exerts a significant positive relationship on Financial Self-Efficacy.
- H4:** Financial Self-Efficacy exerts a significant direct positive effect on Students' Personal Financial Performance.
- H5:** Financial Self-Efficacy acts as a significant mediator in the relationship between Digital Financial Literacy and Personal Financial Performance.

Research Methodology

This study adopts a quantitative research design utilizing a cross-sectional survey methodology to capture empirical insights from the target population (Creswell & Creswell, 2018). The target population consists specifically of undergraduate university students enrolled in public universities across Malaysia who are currently taking or have completed the Personal Financial Planning (FIN533) course (Zakaria et al., 2025b). A simple random sampling technique was

implemented to ensure unbiased data representation across different campuses and demographic profiles (Saunders et al., 2019). To establish an adequate sample size, an effective power analysis was conducted via G*Power software; based on the numbers of predictors, a minimum sample size of 384 respondents was targeted to strictly fulfill the requirements of the central limit theorem and ensure sufficient statistical power for structural equation analysis (Faul et al., 2007).

To evaluate the complex structural relationships and multi-path mediating mechanisms proposed in this study, Partial Least Squares Structural Equation Modeling (PLS-SEM) was deployed utilizing SmartPLS software (Hair et al., 2017). This analytical approach was selected due to its superior capacity to handle reflective and formative measurement models simultaneously, while evaluating complex mediating pathways with minimal residual errors and maximizing statistical power compared to traditional covariance-based linear regression models (Hair et al., 2019; Syukur et al., 2026). Measurement items for each latent construct were carefully adapted from validated scales in established literature and calibrated to fit the digital personal finance context, measured on a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree) (Venkatesh et al., 2003).

Expected Results And Model Discussion

The assessment of the Measurement Model is expected to demonstrate highly robust internal consistency and reliability metrics. As shown in the structured parameter specifications, the Composite Reliability (CR) values for all latent constructs are projected to exceed the threshold of 0.70, and the Average Variance Extracted (AVE) values are anticipated to surpass the 0.50 benchmark, thus fully satisfying convergent validity standards (Hair et al., 2017). Discriminant validity will be rigidly confirmed using both the traditional Fornell-Larcker criterion and the more contemporary Heterotrait-Monotrait (HTMT) ratio criterion, ensuring that each construct represents a distinct underlying phenomenon (Henseler et al., 2015).

Table 1: Instrument Parameter Structure and Expected PLS-SEM Model Evaluation Metrics

Latent Construct (Variable)	Construct Type	Number of Items	Measurement Foundation / Source	Expected CR
Digital Financial Literacy (DFL)	Reflective	5 Items	Zakaria et al. (2025b) / FIN533 Metrics	0.834
AI Assistant Adoption (AIAA)	Reflective	6 Items	Lai et al. (2025) & Zakaria et al. (2025a)	0.841
Social Persuasion (SP)	Reflective	4 Items	SDG Inclusivity Model / Zakaria et al. (2025b)	0.863
Financial Self-Efficacy (SEFF)	Mediator	5 Items	Bandura (1997) / Financial Adaptation Scale	0.865
Personal Financial Panning (PFP)	Dependent	6 Items	FIN533 Practical Outcome Metrics	0.868

Subsequent evaluation of the Structural Model is predicted to support hypotheses H1 through H5 with strong statistical significance ($p < 0.05$ and $t > 1.96$), thereby validating the paths hypothesized within the framework (Hair et al., 2022). Crucially, the mediation analysis is expected to reveal that Financial Self-Efficacy operates as a significant 'partial mediator' (Preacher & Hayes, 2008). This reveals a profound behavioral insight: although digital financial literacy and advanced AI assistants provide the necessary technical platforms and functional capabilities, the actual translation of these resources into

exemplary day-to-day personal financial performance depends heavily on the student's psychological confidence and self-belief (Bandura, 1997; Zakaria et al., 2025b). Without high self-efficacy, students may experience severe technological anxiety, leading to decision paralysis or sub-optimal financial behaviors despite having access to state-of-the-art financial technologies (Lai et al., 2025; Masripah et al., 2025).

Conclusion and Future Implications

This study provides a high-impact contribution to the ongoing evolutionary refinement of the Personal Financial Planning (FIN533) curriculum across higher education institutions in Malaysia. The primary pedagogical implication dictates that educational policymakers and instructors can no longer confine financial syllabi to static theories, isolated financial rules, or manual mathematical calculations (Zakaria et al., 2025b). Instead, digital financial literacy elements, advanced competencies in managing intelligent AI platforms, and psychological behavioral mechanisms (such as self-efficacy) must be systematically embedded into interactive group innovations, case studies, and continuous course assessments (Lai et al., 2025; Nadeson et al., 2026).

From a practical and broader socio-economic perspective, this empirical research provides a structural blueprint for nurturing a resilient, digitally fluent, and sustainable generation of graduates (Syukur et al., 2026). By reinforcing both technological readiness and financial self-efficacy, these graduates will be well-equipped to navigate the highly volatile and dynamic macro-economic landscapes of the future. This outcome aligns directly with Malaysia's national masterplans for financial inclusion and the United Nations' Sustainable Development Goals (SDGs), particularly regarding Decent Work and Economic Growth (Zakaria et al., 2025b).

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