

Optimalization of Artificial Intelligence in *Finansialku* Application as a Personal Finance Management System (PFMS) to Improve Students' Financial Literacy in the Finance and Banking Program at Nusantara Academy

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Abstract

This study aims to optimize the role of Artificial Intelligence (AI) in enhancing university students' financial literacy competence through the use of *Finansialku* as a *Personal Finance Management System (PFMS)*. Financial literacy is an essential skill in the digital economy, particularly for students who are required to manage budgets, savings, investments, and future financial planning effectively. The integration of AI into personal financial management applications enables adaptive, personalized, and data-driven financial learning, addressing the limitations of conventional approaches. *Finansialku* offers a wide range of intelligent features, including automated transaction recording, expenditure analysis, integrated budgeting, investment simulations, and AI-based financial consultations. These features provide an interactive and contextual financial learning experience, encouraging students to better understand their financial conditions. This study applies a qualitative descriptive method through literature review, application observation, and analysis of students' experiences in using *Finansialku*. The findings indicate that using *Finansialku* not only increases financial awareness but also strengthens motivation to learn financial management and supports students in making more rational financial decisions. Consequently, the integration of AI into PFMS applications such as *Finansialku* holds strategic potential for supporting the development of financial literacy competence among university students.

Keywords: Artificial Intelligence, Financial Literacy, Students, Personal Finance Management, *Finansialku*

1. INTRODUCTION

Financial literacy has become one of the essential competencies individuals must possess in the digital economy era. Financial literacy encompasses not only knowledge of basic concepts such as budgeting, saving, debt, and investment but also involves attitudes and behaviors in managing financial resources wisely (OECD, 2020). According to (Xiao and Porto, 2020), financial literacy is a life skill that plays a vital role in shaping rational decision-making abilities, particularly amid the growing complexity of financial products and the ease of access to digital services. On a global scale, improving financial literacy is a crucial factor in ensuring both individual economic well-being and the stability of the national financial system (Lusardi, 2019).

However, various international surveys reveal that financial literacy levels among the general population—especially students and young adults remain relatively low. Reports from the Programme for International Student Assessment (PISA) and (OECD/INFE 2022) indicate that most students only master basic financial skills and struggle to solve complex financial problems. This situation has led to increasingly consumptive behavior, low savings rates, and a rise in personal debt risk (Financial Times, 2023). A similar trend is observed in developing countries such as Indonesia, where formal financial education remains limited and conventional teaching methods are often ineffective in fostering students' practical financial competence.

In the context of higher education, university students represent a group undergoing a transition toward financial independence. During this phase, students are expected to manage their personal finances independently, often without parental supervision. Many face difficulties in controlling spending due to a consumptive lifestyle, online shopping habits, and a lack of budgeting discipline (Hidajat & Kusuma, 2021). Such behaviors create an illusion of financial freedom students feel autonomous in managing money but are, in reality, vulnerable to financial mismanagement. Over time, this may hinder the development of healthy financial habits and cause serious personal financial issues (Susanti et al., 2022).

This issue becomes particularly significant for students in finance and banking programs, who are expected to possess high levels of financial literacy as part of their future professional competence. Ironically, many of these students are recipients of the Kartu Indonesia Pintar (KIP) Scholarship, indicating limited economic capacity. They rely heavily on this financial aid to meet academic and living expenses. When the funds are mismanaged, financial difficulties such as running out of money before the semester ends often arise, disrupting their academic focus and overall well-being.

One AI-based innovation relevant to strengthening students' financial literacy is *Finansialku*, a Personal Finance Management System (PFMS). This application functions not only as a transaction recording tool but also as an educational platform that promotes healthy financial behavior (*Finansialku*, 2023). In Indonesia, *Finansialku* serves as a practical example of how AI can be integrated with financial education. It offers features such as automatic expense categorization, spending analysis, budgeting tools, and AI-driven financial

consultation. Through these features, students can learn to control impulsive spending, recognize personal consumption patterns, and develop responsible financial management habits (Ahamed, S. R., Santhosh, A. 2024).

For KIP Scholarship recipients and students from lower-income backgrounds, using applications like *Finansialku* can be an effective strategy to build financial independence. By leveraging AI's ability to provide personalized recommendations regarding spending and saving, students can adopt sound financial principles early on. Moreover, for finance and banking students, the use of this application enhances their professional competence in analyzing, managing, and planning finances digitally skills that are highly valuable in the modern financial industry (Susanti et al., 2022). Many students have problems managing their personal finances. One of the major issues among university students concerns their financial behaviour, especially their spending habits and cash management skills (Barbic, 2020)

Based on the above discussion, it can be concluded that a gap still exists between the need for improved student financial literacy and the current level of competence. Therefore, this study aims to explore how the optimization of Artificial Intelligence within the *Finansialku* application as a Personal Finance Management System (PFMS) can enhance students' financial literacy, particularly among finance and banking students at Nusantara. The research is expected to contribute theoretically to the development of AI-integrated PFMS models for financial education and to provide practical recommendations for educational institutions in implementing adaptive, ethical, and sustainable technology-based financial learning strategies.

2. RESEARCH METHOD

2.1 Research Framework

This study employs a qualitative descriptive approach using the case study method to gain an in-depth understanding of how students use the *Finansialku* application to manage their personal finances and how its artificial intelligence (AI)-based features contribute to improving financial literacy. This approach is appropriate as it allows the researcher to explore participants' meanings and experiences in a contextual and comprehensive manner. The research was conducted among students of the Finance and Banking Study Program at the Academy of Finance and Banking Nusantara. The subjects were selected through purposive sampling, consisting of students who are recipients of the *KIP Kuliah* (Indonesia Smart Card for Higher Education) or similar educational assistance, users of digital financial applications for at least the past three months, and those willing to participate in interviews or in-depth discussions. The total number of participants was 10 students, determined until data saturation was achieved (Miles, Huberman, & Saldaña, 2019).

Data collection techniques included in-depth interviews, participant observation, and documentation. In-depth interviews were conducted to gather information about students' perceptions and experiences in using the *Finansialku* application. Participant observation was used to directly observe how students utilize various features of the application, such as budget planning, expense tracking, and personal financial report analysis. Documentation included screenshots, usage reports, and supporting materials from literature or official publications. These methods align with contemporary qualitative research practices that emphasize methodological triangulation to enhance the validity of findings (Creswell & Poth, 2020).

Data analysis followed (Miles, Huberman, & Saldaña, 2019) model, consisting of three main stages: data reduction, data display, and conclusion drawing or verification. Data obtained from interviews and observations were analyzed thematically to identify patterns relevant to financial literacy theory and the use of AI-based personal financial management systems. The validity of the data was ensured through source and method triangulation, by comparing results from interviews, observations, and documentation to maintain consistency and credibility (Sugiyono, 2022).

The primary research instrument was the researcher, serving as the key instrument, supported by a semi-structured interview guide developed based on the three dimensions of financial literacy proposed by OECD (2020): financial knowledge, financial behavior, and financial attitude. The study utilized both primary and secondary data. Primary data were collected directly from interviews and observations with student users of the *Finansialku* application, while secondary data were obtained from academic journals, OECD reports, *Finansialku* publications, and relevant literature on AI-based digital financial management published within the last five years (Hidajat & Kusuma, 2021; Susanti et al., 2022).

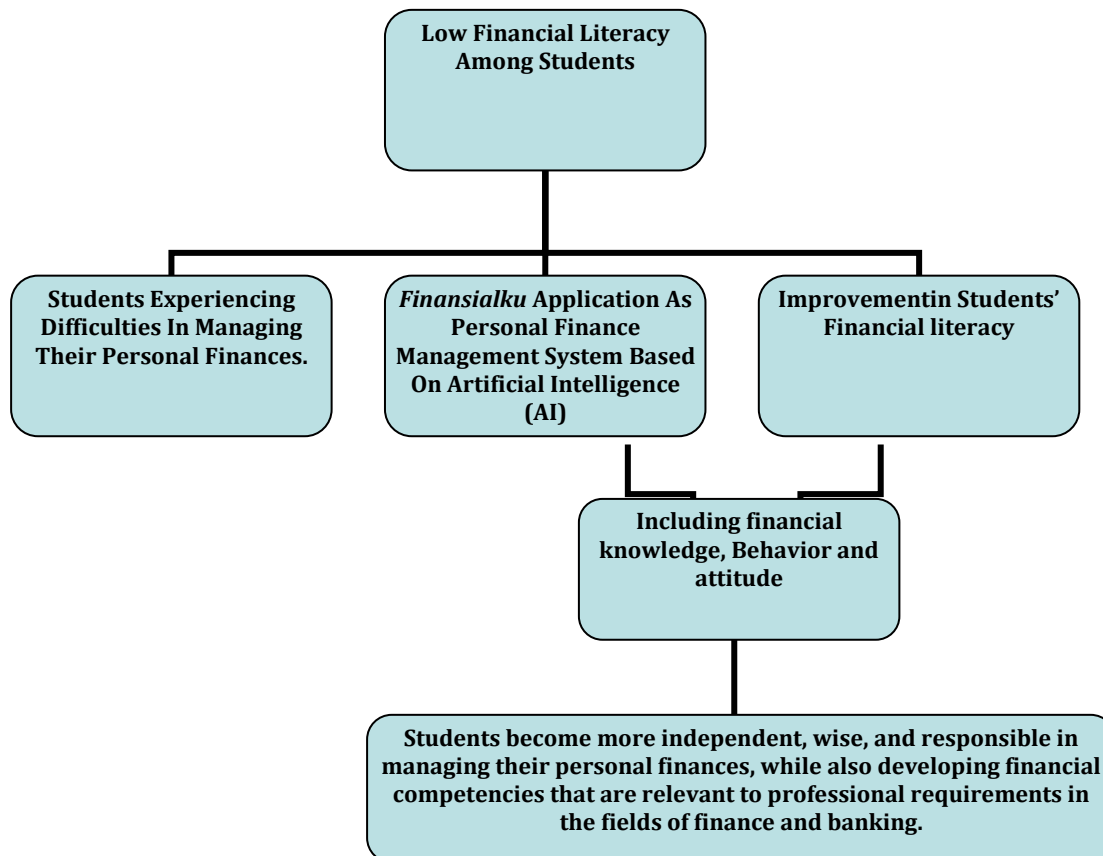


Figure 1. Research Framework

3. RESULT AND DISCUSSION

3.1. Research Findings

3.1.1 Overview of the Use of the Finansialku Application

The findings indicate that most students of the Banking and Finance Study Program, particularly those receiving the KIP College Scholarship, have been using the *Finansialku* application for more than three months. They utilize various features such as automatic expense recording, bill reminders, and monthly budget planning. Data obtained from observations and interviews reveal that the application helps students practically understand the basic concepts of personal financial management, which they had previously learned only in theory during lectures.

Students reported that using *Finansialku* made them “more aware of monthly cash inflows and outflows” and “more disciplined in saving.” This demonstrates an increase in *financial awareness*, which serves as an early indicator of improved financial literacy. Thus, the application not only functions as a financial tracking tool but also as a contextual learning medium that supports students in managing their personal finances effectively.

3.1.2 Impact on Students' Financial Behavior

The results show that the use of an AI-based *Personal Finance Management System* (PFMS) has a significant influence on students' financial behavior. Before using *Finansialku*, most students often experienced financial shortages mid-semester due to poor expenditure control. After adopting the application, they began to implement monthly budgeting strategies, differentiate between primary and secondary needs, and reduce impulsive spending habits.

This behavioral shift indicates a transition toward more rational and measured financial practices. Furthermore, KIP scholarship recipients found the application particularly beneficial for monitoring their educational funds transparently and efficiently, thereby minimizing the risk of running out of money before the end of the semester. The findings highlight that digital financial technologies can strengthen students' decision-making abilities and foster financial independence.

3.1.3 Enhancement of Motivation and Financial Literacy

Thematic analysis reveals that *Finansialku* serves not only as a financial tracking tool but also as an adaptive learning medium. Through its *AI-based financial advice* feature, the application provides personalized recommendations on fund allocation and saving strategies based on each user's spending patterns.

Most students stated that they felt more motivated to learn about financial management because the learning process was interactive and directly applicable to their daily lives. This experiential learning process contributes to increased financial literacy, enabling students to not only understand financial concepts but also to apply them effectively. Consequently, *Finansialku* functions as a digital learning platform that enhances students' motivation, engagement, and financial awareness.

3.1.4 Changes in Financial Attitudes

The study also identifies a significant improvement in students' financial attitudes. They have become more cautious in making financial decisions, particularly regarding consumptive spending and the use of digital credit services. Some students even began planning small-scale investments, such as saving in digital gold or using the investment simulation feature within the application. This shift reflects greater financial responsibility and self-regulation among students. Accordingly, *Finansialku* not only strengthens technical financial management skills but also cultivates prudence, accountability, and independence in personal finance decision-making.

3.1.5 Challenges and Limitations of Application Use

Despite the positive outcomes, several challenges emerged during implementation. First, not all students fully understood the advanced features of *Finansialku*, such as AI-based financial consultations and investment simulations. Second, consistency in using the application remained an issue, as some students were active only at the beginning of the month and tended to neglect recording transactions later on.

Additionally, concerns regarding data security and the reliability of AI-generated recommendations were also raised. These challenges underscore the need for continuous financial and digital literacy education to ensure that students can utilize financial technology safely, critically, and ethically. Strengthening awareness of data protection and responsible AI usage is essential for sustainable adoption.

3.1.6 Synthesis and Research Implications

Overall, the study confirms that integrating *Artificial Intelligence* into *Personal Finance Management Systems* such as *Finansialku* has a significant impact on improving students' financial literacy. The application not only assists users in technical aspects of financial management but also promotes positive changes in awareness, behavior, and financial attitudes.

From an academic perspective, these findings enrich the literature on technology-based financial education and provide an empirical model for higher education institutions to integrate AI-PFMS platforms into financial literacy curricula. For KIP scholarship recipients, the use of *Finansialku* holds strategic potential in fostering financial independence, academic well-being, and professional readiness in the field of finance and banking.

3.2 Discussion

The findings of this study demonstrate that the integration of Artificial Intelligence (AI) within the *Finansialku* Personal Finance Management System (PFMS) plays a transformative role in enhancing students' financial literacy and behavior. This aligns with the broader paradigm shift in financial education, where technology serves as a bridge between theoretical understanding and practical financial application (Hidajat & Kusuma, 2021). The data indicate that AI-supported tools not only strengthen students' ability to manage personal budgets but also improve financial awareness and self-discipline in the long term.

Behavioral improvements such as more structured budgeting, reduced impulsive spending, and better prioritization of essential needs suggest that *Finansialku* promotes experiential financial learning. Students gain knowledge not solely from instruction but through direct interaction with AI-based feedback systems capable of analyzing spending patterns and generating personalized financial advice. This finding corresponds with (Zhang, Li, and Wang 2022), who found that AI-driven learning environments enhance motivation and self-regulated behavior through adaptive, real-time feedback mechanisms. Hence, AI applications such as *Finansialku* can translate abstract financial theories into daily behavioral competencies.

From a psychological standpoint, this research highlights a notable attitudinal shift toward financial responsibility. Students began to demonstrate more prudent consumption, a greater tendency to save, and early participation in micro-investment practices. These behavioral transformations affirm (Susanti, Mulyani, and Putri 2022), who emphasized that technology-based financial literacy education fosters accountability and self-control in decision-making. In this context, AI functions not only as an analytical tool but also as a *behavioral catalyst* that nurtures rational and ethical financial behavior.

Nevertheless, several limitations were observed. Some students exhibited inconsistent engagement with the application, particularly when financial stress decreased. Others faced challenges in utilizing advanced features such as AI-based consultations and investment simulations. This supports (Lee and Kim 2023), who argue that digital trust and ethical literacy are fundamental for sustained engagement with AI-driven finance

systems. Accordingly, universities should integrate modules on *AI literacy* and *digital ethics* within their financial education programs to encourage responsible and informed technology use.

The study also offers implications for students from lower-income backgrounds, especially KIP scholarship recipients, who often experience financial vulnerability. The use of *Finansialku* significantly improved their ability to manage limited educational funds, contributing to greater financial stability. This finding corroborates (Ratnasari, Prasetyo, and Nurfadillah, 2025), who found that financial literacy positively correlates with financial resilience among Indonesian students. Integrating AI-based PFMS tools into financial aid programs could thus enhance both academic persistence and financial well-being.

Complementing these findings, (Mbatane and Kekana, 2024) observed that students who possess a better understanding of digital financial products, risk control, and consumer rights are more likely to engage with FinTech services. Similarly, (Rasyid, Goso, and Ikbal, 2025) reported that both financial literacy and financial technology simultaneously influence students' financial behavior, confirming the intertwined relationship between knowledge, technology, and behavioral outcomes. Moreover, (Ratnasari, Nurjannah, and Karoma, 2025) highlighted that digital tools such as mobile banking and digital wallets significantly improve students' financial tracking and budgeting efficiency, though demographic factors such as gender and age had minimal influence.

Finally, (Ahamed, 2025) emphasized that many consumers still fail to fully control their financial health due to the lack of intelligent tools capable of simplifying and personalizing the financial management process. In this regard, *Finansialku* as an AI-based PFMS demonstrates potential in addressing this technological gap by offering an interactive, user-centered approach to financial education and empowerment.

4 CONCLUSION

This study concludes that the integration of Artificial Intelligence (AI) in the *Finansialku* Personal Finance Management System (PFMS) plays a significant role in enhancing students' financial literacy, behavior, and attitudes. The use of AI-driven features such as automated expense tracking, budgeting tools, and personalized financial recommendations enables students to understand personal finance concepts in a more practical and experiential way, extending beyond theoretical classroom knowledge. The findings reveal a notable improvement in students' financial behavior, characterized by greater budgeting discipline, reduced impulsive spending, and increased saving habits. Furthermore, students have become more financially aware, responsible, and prudent in managing their personal finances, reflecting the positive behavioral transformation encouraged by continuous interaction with the application. AI-based adaptive learning features also provide personalized feedback and tailored recommendations, which enhance students' motivation and financial awareness. This demonstrates the potential of digital technology as an interactive and context-based financial learning medium that supports experiential financial education. However, several challenges remain, including limited understanding of advanced features, inconsistent user engagement, and growing concerns regarding data security and AI recommendation accuracy. Therefore, sustained digital literacy programs are necessary to ensure that students use financial technology critically, ethically, and effectively. Overall, *Finansialku* functions not only as a technical financial management tool but also as a transformative educational platform that bridges theoretical financial knowledge with real-world practice helping to shape a generation of financially literate, independent, and responsible young professionals.

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