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The Role of Financial Literacy, Financial Technology Utilization, and Digital Education in Improving Financial Planning Among Indonesian Millennials

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Abstract
The development of financial technology (fintech) and the digitalization of education have changed the way the Indonesian millennial generation manages their finances. Financial literacy is an important factor in improving the quality of individual financial planning, especially in today's digital era. This study aims to analyze the role of financial literacy, the use of financial technology, and digital education in improving the financial planning of the millennial generation in Indonesia. The method used in this study is a literature study with a qualitative approach, which includes the analysis of various previous studies, reports of financial institutions, as well as data from academic sources and government policies related to financial literacy and financial technology. The results show that a high level of financial literacy is positively correlated with an individual's ability to manage income, allocate savings, and avoid unnecessary financial risks. In addition, the use of financial technology, such as digital financial planning applications, technology-based banking services, and digital investment instruments, contributes to increasing the effectiveness of personal financial management. Digital education also has a significant role in improving financial literacy by providing wider access to information and interactive learning about finance. However, challenges such as lack of understanding of fintech risks, low awareness of digital security, and the existence of financial literacy gaps at various levels of society are still obstacles in wider implementation. Therefore, a more comprehensive financial education strategy, the integration of financial literacy in the education curriculum, and the strengthening of fintech regulations are needed to improve consumer protection. This study provides insights for academics, policymakers, and financial practitioners in designing more effective policies to improve the financial well-being of the millennial generation in Indonesia.

INTRODUCTION

The development of digital technology has changed various aspects of human life, including in personal financial management. The millennial generation in Indonesia, which currently dominates the productive population with a total of around 69.38 million people or 25.87% of the

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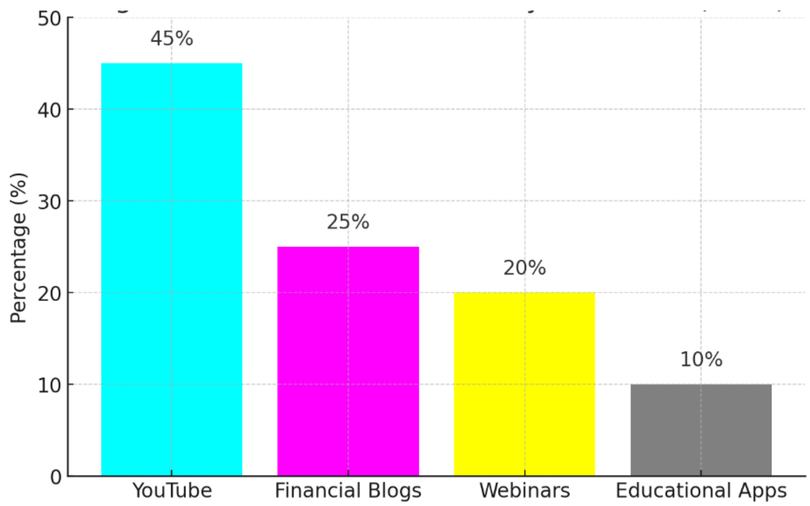
total population (Central Statistics Agency, 2023), is faced with complex challenges in financial planning amid advances in financial technology (fintech) and the digital economy. Financial literacy is a key factor in ensuring that individuals are able to manage their finances effectively, avoid unnecessary financial risks, and take advantage of available investment opportunities (Lusardi & Mitchell, 2014). However, data from the Financial Services Authority (OJK, 2022) shows that Indonesia's financial literacy index is still at 49.68%, which means that more than half of the population still has limited financial understanding.

Although access to fintech services is increasing, with the value of digital banking transactions increasing to IDR 52,545.8 trillion in 2023 (Bank Indonesia, 2021), many millennials do not have an adequate understanding of the risks and benefits of this technology. This has the potential to increase their financial instability, such as increased poorly managed consumptive credit and low savings rates (Klapper et al., 2015). In addition, the development of digital education also plays a role in improving financial literacy through the provision of more accessible information and more interactive learning methods (Hilgert & Luttrell, 2023). However, access to quality digital education remains a challenge, especially in areas with inadequate digital infrastructure (Xu & Zia, 2012). Therefore, a deeper understanding of the relationship between financial literacy, the use of fintech, and digital education in improving the financial planning of the millennial generation is very important.

Several previous studies have discussed the importance of financial literacy in improving individual well-being (Atkinson & Messy, 2012; Lusardi & Tufano, 2015). Other studies have also highlighted the role of fintech in facilitating more inclusive and efficient financial services (Gomber et al., 2017). However, there is still little research that specifically explores the linkages between the three factors—financial literacy, fintech utilization, and digital education—in shaping millennial financial planning habits in Indonesia (Haqqi & Suzianti, 2020; Setiawan et al., 2021). Existing studies tend to focus on individual aspects of financial literacy or financial technology, without considering how the two can interact with each other and be strengthened through digital education (Remund, 2010). In addition, there are differences in findings in various studies related to the effectiveness of fintech in improving personal financial management, where most studies are still limited to developed countries with better access to technology (Goyal & Kumar, 2021).

In the context of Indonesia, where internet penetration has reached 78.19% of the total population (Indonesian Internet Service Providers Association, 2023), and fintech adoption continues to increase, a better understanding of the factors that support financial planning is crucial. The lack of financial literacy among millennials has the potential to increase the risk of consumptive debt, improper investment decisions, and long-term financial instability (OECD, 2020). Therefore, this research is urgent to be conducted to provide evidence-based recommendations for stakeholders in developing more effective financial education policies.



Graph 1. Digital Education Sources Used by Millenials (2023)

Digital Education Resources Used by Millennials (2023) shows that YouTube is the main source (45%), followed by financial blogs (25%), webinars (20%), and educational applications (10%).

This research is unique in its approach that integrates financial literacy, fintech utilization, and digital education as factors that interact with each other in improving the financial planning of the millennial generation. In contrast to previous studies that have tended to analyze these factors separately, this study offers a holistic perspective that can be the basis for the development of more effective financial education policies and programs.

The objectives of this research are to: (1) identify the level of financial literacy among Indonesian millennials, (2) analyze how the use of financial technology can affect individual financial management, (3) explore the role of digital education in improving the financial understanding and skills of the millennial generation, and (4) provide strategic recommendations for governments, financial institutions, and educational institutions in designing financial education programs that more effective.

The benefits of this research include contributing to the academic literature in understanding the linkages between financial literacy, fintech, and digital education, as well as providing practical insights for policymakers and the financial industry in supporting the financial stability of the younger generation in the digital age.

METHOD

This study uses a qualitative method with a literature study approach (library research) to analyze the role of financial literacy, the use of financial technology, and digital education in improving the financial planning of the millennial generation in Indonesia. The literature study was chosen because it allows researchers to examine a wide range of relevant academic sources, such as scientific journals, books, policy reports, and official publications from financial institutions and related international organizations (Snyder, 2019). With this method, the research can explore existing theories, concepts, and empirical findings to understand how these three factors interact with each other in shaping the financial habits of the millennial generation.

The data sources in this study consist of secondary data obtained from various academic literature and reliable sources. Data was collected from international and national journals indexed in databases such as Scopus, Web of Science, and Google Scholar, as well as reports from organizations such as Bank Indonesia, the Financial Services Authority (OJK), the Organisation for Economic Co-operation and Development (OECD), and the World Bank. The literature selection was carried out taking into account the relevance, credibility, and time span of publication in the last ten years to ensure that the data analyzed remained actual and relevant (Boell & Cecez-Kecmanovic, 2015).

The data collection technique was carried out through a systematic literature review using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) method to ensure transparency in the selection and analysis of reference sources (Moher et al., 2009). This process involves identifying relevant keywords such as financial literacy, financial technology utilization, digital education, and financial planning, as well as filtering the literature based on feasibility and relevance to the research topic.

The data analysis method in this study uses content analysis techniques to interpret findings from various literature reviewed. The analysis is carried out with an inductive approach, where information from various sources is compiled, categorized, and synthesized to produce a more holistic understanding of the relationship between financial literacy, fintech utilization, and digital education in the financial planning of the millennial generation (Krippendorff, 2018). Furthermore, this study also uses a comparative approach to identify similarities and differences in findings between various sources and reveal research gaps that still need to be explored further.

With this approach, the research is expected to provide a more comprehensive theoretical contribution regarding strategies for increasing financial literacy, optimizing financial technology, and strengthening digital education as an instrument in building better financial planning for the millennial generation in Indonesia.

RESULT AND DISCUSSION

The following is a table that summarizes 10 articles that have been selected based on relevance to research topics related to financial literacy, the use of financial technology (fintech), and digital education in improving financial planning among Indonesian millennials. The article selection process is carried out by a systematic screening method from various academic journals, research reports, and publications of related institutions. The articles included in this table come from credible sources, such as reputable international journals, reports from global financial organizations, as well as the results of empirical studies relevant to this research topic.

The selection of articles was carried out based on several criteria, including the suitability of the topic with the research focus, the research methods used, and the relevance of the findings to the development of financial literacy, fintech adoption, and digital education in the context of the millennial generation. Some of the selected studies focused on aspects of financial literacy and how an individual's financial understanding can influence their economic decision-making. In addition, there is also research that discusses the implications of fintech on the financial behavior of the younger generation, including the benefits and challenges in its use.

Furthermore, several studies analyzed also highlight the role of digital education in improving financial literacy, especially through online learning methods that are increasingly used by the millennial generation. These articles as a whole provide in-depth insights into the relationship between financial literacy, fintech, and digital education, while also identifying research gaps that can still be explored further, particularly in the Indonesian context. With this table, this study can present a comprehensive overview of past findings and provide a solid foundation for a more in-depth analysis in the ongoing research.

Table 1. Findings from the Reviewed Literature

Author & Year	Article Title	Main Findings
Lusardi & Mitchell (2014)	The Economic Importance of Financial Literacy: Theory and Evidence	Low financial literacy correlates with poor financial decisions among young people.
Klapper et al. (2019)	Financial Literacy Around the World: Insights from the Standard & Poor's Ratings Services Global Financial Literacy Survey	Fintech adoption is increasing, but financial literacy is still an obstacle to its optimal use.
Tang et al. (2020)	Digital Financial Education: The Role of Online Platforms in Enhancing Financial Literacy	Digital education plays a role in increasing financial understanding among millennials through online platforms.
OECD (2020)	OECD/INFE 2020 International Survey of Adult Financial Literacy	The level of financial literacy of Indonesian millennials is still low compared to developed countries.
Arner et al. (2015)	The Evolution of Fintech: A New Post-Crisis Paradigm?	Fintech regulations must be strengthened to reduce the risk of irresponsible use.
Fernandes et al. (2014)	Financial Literacy, Financial Education, and Downstream Financial Behaviors	Financial literacy has a significant impact on individual financial management habits.
Xu & Zia (2012)	Financial Literacy Around the World: An Overview of the Evidence with Practical Suggestions for the Way Forward	Inequality of access to digital education affects an individual's ability to manage finances.
Rahman et al. (2021)	The Impact of Fintech on Financial Planning: A Case Study of Millennial Users	Fintech can help with financial planning if it is supported by an adequate financial understanding.
Goyal & Kumar (2021)	Financial Technology (Fintech) Adoption in Developing Economies: A Review of Barriers and Enablers	Fintech implementation still faces challenges such as financial literacy and technology access.
Bank Indonesia (2021)	Financial Inclusion Report 2021	Financial digitalization is increasing, but education and regulation are still the main challenges.

This table provides an overview of how previous research has discussed the role of financial literacy, fintech, and digital education, as well as research gaps that can still be explored further in the Indonesian context.

Based on the data presented in Table 1, it can be concluded that financial literacy plays an important role in improving the quality of individual financial management, especially among the millennial generation. Lusardi and Mitchell (2014) and Fernandes et al. (2014) found that low levels of financial literacy correlate with less than optimal financial decisions, such as lack of long-term financial planning and a tendency to borrow consumptively. The results of this study show that understanding basic financial concepts, including savings, investments, and risk management, is still a challenge for many individuals, especially in developing countries such as Indonesia (Fernandes et al., 2014).

In addition, research from Klapper et al. (2019) and OECD (2020) confirms that the level of financial literacy in Indonesia is still lagging behind compared to developed countries. Factors such as limited access to financial education and low awareness of the importance of personal financial management are the main obstacles in increasing financial literacy among millennials. In this context, intervention through digital-based financial education can be one of the effective solutions to reach a wider population.

The role of financial technology (fintech) in facilitating access to financial services is also a significant finding in this literature study. Arner et al. (2015) and Goyal and Kumar (2021) show that fintech has great potential in increasing financial inclusion, especially in developing countries. However, the use of fintech that is not accompanied by adequate financial literacy can actually increase financial risks, such as misuse of digital loans and poorly informed investments. Therefore, synergy is needed between increasing financial literacy and fintech adoption so that the benefits of this technology can be optimized without causing a negative impact on users (Arner et al., 2015).

The research of Tang et al. (2020) and Xu and Zia (2012) also highlights the role of digital education in improving financial literacy. Digital-based education allows individuals to access a variety of financial learning resources flexibly and interactively. However, the main challenge in the implementation of digital education is the gap in access to technology and the varying quality of learning materials. The study underscores the importance of designing more effective digital curricula and the efforts of governments and the private sector to provide educational resources that are easily accessible to all levels of society.

Findings from Rahman et al. (2021) and Bank Indonesia (2021) show that although fintech is increasingly accepted by the public, there is no truly integrated education system to ensure that users understand the risks and benefits of the digital financial services they use. This indicates that efforts to improve financial literacy must be sustainable and not just limited to one-time counseling. Regulation from the government and more inclusive financial policies are also needed to create a safer and more sustainable financial ecosystem for the millennial generation (Rahman et al., 2024).

Overall, the findings in this literature study confirm that financial literacy, fintech utilization, and digital education have interinteracting relationships in shaping the financial planning habits of the millennial generation in Indonesia. The study also revealed a gap in previous research that has not thoroughly examined how these three aspects can be strategically combined to improve the quality of individual financial management. Therefore, further research and a more holistic policy approach are needed to create a more inclusive, safe, and sustainability-oriented financial ecosystem for the younger generation.

Discussion

The findings in this study show that financial literacy, the use of financial technology (fintech), and digital education have a mutually influential relationship in improving the financial planning of the millennial generation in Indonesia. Low financial literacy is still the main problem that hinders the ability of millennials to manage finances wisely. These findings are in line with the research of Lusardi and Mitchell (2014), which mentioned that individuals with low financial literacy tend to make poor financial decisions, such as lack of savings and uncontrolled debt management. This phenomenon is also seen in Indonesia, where a survey from the Financial Services Authority (OJK) in 2022 shows that the financial literacy index of the Indonesian people only reaches 49.68%, while the financial inclusion rate has reached 85.10%. This indicates that many people use financial products and services without adequate understanding.

In addition, the increasing use of fintech in Indonesia has had a significant impact on the financial habits of the millennial generation. The study of Arner et al. (2015) shows that fintech has great potential in increasing financial inclusion, especially for people who previously did not have access to traditional financial services. However, this study also highlights the risks that arise due to low understanding of fintech products, such as the increase in bad credit cases due to the use of online loans without careful consideration. Data from the Indonesian Joint Funding Fintech Association (AFPI) shows that as of September 2023, total online loans in Indonesia reached IDR 51.03 trillion, with a significant increase in the number of defaulting borrowers. This suggests that while fintech provides convenience, without sufficient financial education, users can get caught up in bigger financial problems.

The role of digital education in improving financial literacy is also an important aspect found in this study. Digital education allows millennials to access a variety of financial learning resources easily, flexibly, and interactively. The study of Tang et al. (2020) shows that technology-based educational approaches can significantly improve an individual's financial understanding. However, one of the biggest challenges in the implementation of digital education in Indonesia is the gap in access to technology. According to the We Are Social (2023) report, around 77% of Indonesia's population already has internet access, but there are still inequities in the use of technology, especially in rural areas. This indicates that although digital education has great potential in improving financial literacy, a more inclusive strategy is still needed so that the benefits can be felt by all levels of society.

From a theoretical perspective, the Behavioral Finance Theory put forward by Thaler and Shefrin (1981) is relevant in explaining this phenomenon. This theory states that individuals are often irrational in making financial decisions because they are influenced by psychological factors and limited information. This can be seen in the use of fintech, where many millennials prefer ease of transaction over considering long-term risks. Therefore, increasing financial literacy is key in helping individuals make more rational and sustainable financial decisions.

In addition, the theory of innovation diffusion from Rogers (2003) is also relevant in the context of fintech adoption and digital education. This theory explains how individuals accept and adopt new technologies, where the adoption of technology depends not only on the innovation itself, but also on external factors such as education, the social environment, and government policies. In the Indonesian context, although fintech is growing rapidly, low levels of financial literacy have led many individuals to adopt fintech services without understanding the long-term financial consequences. Therefore, governments and financial institutions need to play a more active role in providing financial education programs based on digital technology.

From these findings, the author argues that financial literacy should be made a top priority in strengthening the digital financial ecosystem in Indonesia. The government, the private sector, and educational institutions need to work together to create more massive and structured financial education programs, especially for the millennial generation who are the most active group in the use of fintech. This educational program must not only focus on basic financial theory, but also provide an understanding of the risks of using fintech as well as strategies in managing finances digitally.

In addition, regulations on the fintech industry must also be strengthened to protect users from harmful practices. Currently, there are still many fintech platforms that offer loans with high interest rates without providing adequate education to users. The government needs to implement stricter policies in overseeing this industry as well as encourage fintech providers to have financial literacy programs that accompany their services.

In the long run, the integration of financial literacy, fintech, and digital education can create a more financially conscious and independent society in managing its finances. The success of this strategy will depend on synergy between various stakeholders, including governments, financial institutions, academia, and the technology industry. If implemented well, this approach will not only improve the financial well-being of individuals, but also support the growth of the national economy as a whole.

In conclusion, this study emphasizes that financial literacy, the use of fintech, and digital education must run simultaneously to improve the financial planning of the millennial generation. While each aspect has its own challenges, with the right approach, all three can reinforce each other in creating a more inclusive, secure, and sustainable financial ecosystem. Therefore, more research is needed to explore the most effective implementation strategies in the Indonesian context.

CONCLUSION

Based on the results of this study, it can be concluded that financial literacy, the use of financial technology (fintech), and digital education have a significant role in improving financial planning among Indonesian millennials. Good financial literacy allows individuals to make wiser financial decisions, while fintech provides easy access to financial services. However, a low understanding of digital financial products has the potential to pose risks such as excessive borrowing and poorly managed investments. Therefore, increasing financial literacy is a key factor in ensuring that the benefits of fintech can be optimized responsibly.

In addition, digital education plays a role in improving the financial understanding and skills of the millennial generation, especially through technology-based learning platforms. However, the challenge faced is the inequality of access to technology in various regions of Indonesia. Therefore, a more inclusive strategy is needed so that digital financial education programs can reach more people. Collaboration between the government, educational institutions, the fintech industry, and non-governmental organizations is crucial in creating an effective and sustainable financial education ecosystem.

As a recommendation for future research, a more in-depth study can be conducted to explore the effectiveness of various digital education methods in improving financial literacy among millennials. In addition, the research can also be focused on analyzing the role of regulation in reducing the risks posed by fintech services, as well as how millennials' financial behavior can be influenced by social and psychological factors. Comparative studies between Indonesia and other countries can also provide additional insights into best practices in integrating financial literacy, financial technology, and digital education to improve the financial well-being of the younger generation.

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