

Empowering Financial Decision-Making in the Digital Age: Evaluating Educational Efforts and Their Influence on Consumer Behavior

Memberdayakan Pengambilan Keputusan Keuangan di Era Digital: Mengevaluasi Upaya Edukasi dan Pengaruhnya terhadap Perilaku Konsumen

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ABSTRACT

This research explores the role of financial literacy and digital technology in financial decision making in the digital era. Strong financial literacy has been proven to have a positive impact on individual financial well-being, especially in facing the economic challenges caused by the COVID-19 pandemic. However, there are still challenges in achieving optimal financial literacy in the digital era, such as the digital divide and lack of adequate financial literacy. Therefore, efforts to improve financial literacy, especially through educational initiatives, are critical. The implication of this research is that the integration of financial and digital literacy in the education curriculum as well as building community capacity can help individuals to be better prepared to face the challenges and opportunities in the digital era.

Keywords: Financial literacy, digital technology, financial decision making, financial education, digital divide.

ABSTRAK

Penelitian ini mengeksplorasi peran literasi keuangan dan teknologi digital dalam pengambilan keputusan keuangan di era digital. Literasi keuangan yang kuat terbukti memberikan dampak positif terhadap kesejahteraan finansial individu, terutama dalam menghadapi tantangan perekonomian akibat pandemi COVID-19. Namun demikian, masih terdapat tantangan dalam mencapai literasi keuangan yang optimal di era digital, seperti kesenjangan digital dan kurangnya literasi keuangan yang memadai. Oleh karena itu, upaya untuk meningkatkan literasi keuangan, terutama melalui inisiatif pendidikan, sangatlah penting. Implikasi dari penelitian ini adalah integrasi literasi keuangan dan digital ke dalam kurikulum pendidikan serta peningkatan kapasitas masyarakat dapat membantu individu untuk lebih siap menghadapi tantangan dan peluang di era digital.

Kata Kunci: Literasi keuangan, teknologi digital, pengambilan keputusan keuangan, pendidikan keuangan, kesenjangan digital.

1. Introduction

Empowering Financial Decision-Making in the Digital Age is a critical aspect of consumer behavior and financial literacy. Financial education plays a crucial role in empowering consumers by providing them with the necessary knowledge and skills to make informed decisions (Ilias & A'zmi, 2022). It is widely acknowledged that financial literacy is essential for individuals to navigate the complexities of the modern digital economy (Lusardi & Mitchell, 2014). Moreover, research has shown that financial education can lead to increased confidence in financial decision-making abilities, particularly as individuals age (Lusardi, 2019). This highlights the importance of targeting students and young adults in educational institutions to equip them with the tools for sound financial decision-making (Becker-Olsen et al., 2006).

In the context of corporate social responsibility (CSR), there is evidence that CSR initiatives can influence consumer behavior and differentiate product offerings (Jia et al., 2022).

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This suggests that companies can leverage CSR to enhance consumer empowerment through informed decision-making. Additionally, the use of technology in financial literacy education is deemed crucial in the digital era, similar to the importance of traditional literacy and numeracy (Golden & Cordie, 2022). Furthermore, the digitalization and intelligence of financial decision support systems can create a more comprehensive financial operational environment, standardize financial personnel behavior, and enhance the transparency of financial information, aligning with the trend of enterprise financial management in the future (Anuradha & Divya, 2022).

Financial inclusion also plays a significant role in empowering individuals, particularly women in rural areas, leading to increased confidence, self-assurance, and decision-making power (Gamble et al., 2015). Moreover, the impact of cognitive changes associated with aging on financial decision-making capability has been studied, emphasizing the need to understand how aging influences financial literacy and numeracy. In conclusion, empowering financial decision-making in the digital age requires a multifaceted approach that encompasses financial education, corporate social responsibility, technological integration, and financial inclusion. These efforts are crucial for enhancing consumer behavior and ensuring that individuals are equipped to make informed financial decisions in the digital era.

The digital era has indeed revolutionized financial decision-making, providing individuals with unprecedented access to financial information and products. This transformation is driven by various factors, including financial education, data-backed decision making, and wider availability of financial products. Financial education plays a crucial role in enhancing financial literacy and understanding basic financial concepts, thereby empowering individuals to make informed decisions (Klapper & Lusardi, 2019). Moreover, digital technology facilitates the availability and affordability of financial products, enabling individuals to select products that align with their financial needs and goals (Ilias & A'zmi, 2022). Data analysis and artificial intelligence algorithms further support investment decisions and financial planning, enhancing individuals' ability to make effective financial choices (Tian et al., 2022). However, it is essential to consider security and consumer protection aspects in digital financial transactions to manage cybersecurity risks wisely (Ojeniyi et al., 2019).

The impact of digital technology on financial decision-making is not limited to individual empowerment. It also extends to societal digital maturity, leading to empowered choices, decision-making, and well-being (Elliott et al., 2021). Furthermore, the digital era has influenced financial inclusion, particularly in rural areas, leading to an increase in the self-confidence and self-esteem of women entrepreneurs, indicating positive changes in their development (Anuradha & Divya, 2022). Additionally, digital competency has been identified as a key factor in the financial inclusion of young people, highlighting the positive impact of digital competency on using internet banking services and effective financial decision-making (Fernández et al., 2023).

While the digital era presents numerous opportunities for empowering financial decision-making, it also brings challenges, particularly in terms of security risks and the digital divide. Studies have emphasized the importance of addressing cybersecurity risks in online banking transactions to ensure the safety of financial operations (Ihab et al., 2020). Moreover, the digital divide has been found to significantly reduce household participation in financial markets, indicating the need to bridge this gap to ensure equitable access to financial opportunities (Dong, 2023). In conclusion, the digital era has reshaped financial decision-making, offering individuals enhanced access to financial information, products, and tools. Financial education, data-backed decision making, and wider availability of financial products have empowered individuals to make informed choices. However, addressing cybersecurity risks and bridging the digital divide are crucial for ensuring the inclusive and secure advancement of financial decision-making in the digital era.

In the increasingly developing digital era, paradigm changes in financial decision

making are becoming increasingly apparent. Although digital technology has provided greater access to financial information and financial products, new challenges have also emerged. The use of technology in a financial context carries security and privacy risks that need to be taken into account, while the digital divide is also an obstacle to equitable access to financial opportunities. Therefore, this phenomenon raises the need to understand more deeply the impact of the use of digital technology in financial decision making and identify ways to overcome related challenges.

This research is urgent because of the importance of overcoming challenges and exploiting emerging opportunities in financial decision making in the digital era. Increasing financial literacy and empowering consumers through financial education is key to helping individuals face the complexities of the digital economy. Additionally, by understanding the impact of digital technology on financial behavior and decision making, this research can provide a foundation for the development of more effective policy strategies in promoting financial inclusion and the security of online financial transactions.

Although there has been previous research examining the impact of digital technology on financial decision making, there are still knowledge gaps that need to be filled. Previous studies tend to focus on certain aspects, such as financial literacy or the security of online transactions, without thoroughly considering the interactions between various factors in the context of financial decision making. Therefore, it is hoped that this research can fill this knowledge gap by providing a more holistic and in-depth insight into the influence of digital technology on individual financial behavior.

It is hoped that this research can make a significant contribution to practitioners, academics and policy makers in understanding the impact of digital technology on financial decision making. By providing comprehensive insight into the factors influencing financial behavior in the digital era, this research can assist in the development of more effective financial education strategies, the implementation of more appropriate policies in promoting financial inclusion, and the development of safer and more reliable digital financial services .

2. Research Methods

The research method used in this research is a systematic literature review. The first step in this research was collecting articles from reputable international databases that were relevant to the research topic. Keywords used in the article search included phrases such as "empowering financial decision-making," "financial literacy," "digital age," "educational initiatives," and "consumer behavior." The use of these keywords aims to ensure that the articles found are relevant to the research focus.

After conducting the search, the articles obtained will be carefully screened to ensure that they meet the established inclusion criteria. These inclusion criteria will include the relevance of the topic to the research, the type of article (e.g., an academic journal, not a news article), and the specific year of publication (e.g., articles published within the last five years). Articles that do not meet the inclusion criteria will be excluded from the analysis.

The PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) method will be used as a guide for organizing and reporting the results of this systematic literature review. The PRISMA method will help ensure that the search process, article selection and data analysis are carried out transparently and systematically. The steps taken in this research will be clearly documented, including the number of articles found, the number of articles that meet the inclusion criteria, and the results of data analysis that are relevant to the research questions. Thus, this research method will provide a solid foundation for conducting in-depth evaluations of financial education initiatives and their impact on consumer behavior in the digital era.

3. Results and Discussions

3.1. The Digital Era and Financial Literacy

Financial literacy is crucial in the digital era, especially with the rise of digital financial services and the impact of the COVID-19 pandemic. Studies have shown that digital financial literacy significantly affects personal financial health during the pandemic (Nurlaily et al., 2022). Furthermore, there is a growing emphasis on improving financial literacy in the era of Society 5.0, highlighting the importance of individuals' ability to make informed decisions about their financial arrangements (Nurlaili et al., 2021). Additionally, the susceptibility of individuals to digital finance plays a significant role in increasing prosperity, indicating the need for a deeper understanding of digital financial services and products offered in the financial market (Divaeva et al., 2021).

Moreover, efforts to increase the Human Development Index through literacy improvement programs encompass various aspects, including financial literacy and digital literacy, which have been proven to contribute to community development (Muti'ah et al., 2022). This highlights the multifaceted nature of literacy in the digital era and its impact on overall development.

In Indonesia, there has been a specific focus on analyzing financial literacy among first-semester students, shedding light on the importance of understanding financial literacy in educational institutions within the context of the digital era (Zanariasti & Iksari, 2020). This underscores the need for early exposure to financial literacy in the digital age to equip individuals with the necessary skills to navigate the evolving financial landscape.

Overall, these studies emphasize the significance of financial literacy and digital finance in the digital era, highlighting the need for comprehensive literacy improvement programs and educational initiatives to ensure individuals are equipped to make informed financial decisions and prosper in the digital economy.

3.2. Definition of Financial Literacy

Financial literacy encompasses more than just the knowledge of economic concepts. It involves the ability to understand financial conditions, change knowledge into behavior, and covers awareness of needs and availability of financial services, as well as the skills to use these services (Santoso et al., 2020; Sholevar & Harris, 2020). Additionally, financial literacy is associated with sustainable consumer behavior and is defined as familiarity with basic economic concepts and financial products, as well as the ability and confidence to manage one's finances through short-term decision making and long-term planning, considering economic events and changing conditions (Nicolini, 2019; "Consumers' Insurance Literacy: Literature Review, Conceptual Definition, and Approach for a Measurement Instrument", 2019). Furthermore, the definition of financial literacy includes conceptual knowledge, the ability to communicate about it, skill in managing personal finance, making sound financial decisions, and planning for a financially secure future (Sholevar & Harris, 2019). The Organization for Economic Cooperation and Development (OECD) proposes analyzing financial literacy in terms of knowledge, skills, and attitude (Stella et al., 2020).

3.3. The Influence of Digital Technology

The pervasive influence of digital technology has significantly impacted various domains, including value creation, organizational performance, and innovation. Digital technologies have disrupted industries, changed economies, and influenced the performance of small and medium-sized enterprises (SMEs) (Kő et al., 2021; Patria et al., 2023). The adoption of digital technology has been found to contribute to organizational performance by reducing costs and increasing flexibility, positively influencing enterprise performance (Li et al., 2022). Furthermore, the use of digital technologies has been shown to increase knowledge sharing opportunities, leading to improved work-life balance and job performance (Duan et al.,

2023). In the context of education, the importance of increasing teachers' digital competence has been emphasized, as it influences their use of digital technology and prepares students for future professions (Hanifah et al., 2023; Mardiana, 2023). Additionally, the impact of digital technology on health-related quality of life has been assessed, highlighting its influence on individuals' well-being (Lockl et al., 2022).

Moreover, the influence of digital technology extends to environmental and economic performance, with studies demonstrating its impact on green innovation, carbon markets, and profitability in the financial industry (Xie, 2023; Wang & Dou, 2023; Yang & Wu, 2023). The adoption of digital technologies has also been found to influence firms' innovation performance, emphasizing the need to recognize and leverage individual beliefs for digital transformation (Usai et al., 2021; Solberg et al., 2020). Additionally, the influence of digital technologies on company management has been highlighted, emphasizing the importance of a clear digital strategy as an integral part of corporate business strategy (Martinčević & Kozina, 2021). In conclusion, the influence of digital technology spans across various sectors, impacting organizational performance, innovation, education, environmental sustainability, and individual well-being. The adoption and integration of digital technologies have become imperative for organizations to enhance their competitiveness, drive innovation, and adapt to the evolving digital landscape.

3.4. Challenges and Opportunities

Empowering financial decision-making in the digital age presents both challenges and opportunities. Digital competency has been identified as crucial for the financial inclusion of young people, with a focus on enhancing financial literacy and understanding complex financial products (Fernández et al., 2023). Financial education is recognized as a means of empowering consumers by eliminating obstacles to market entry and enhancing access to relevant information (Ilias & A'zmi, 2022). Furthermore, consumer empowerment is closely linked to financial literacy, as it enables individuals to understand complex financial products and make informed decisions about their financial situation (Bakar et al., 2020). Despite the increasing use of digital devices for accessing financial information, there is still a lack of financial literacy, highlighting the potential to use digital information to improve financial decision-making (Golden & Cordie, 2022). However, the digital divide poses a challenge, as uneven diffusion and development obstacles of digital technology can lead to new financial exclusion among certain disadvantaged groups due to their lack of resources and financial literacy (Dong, 2023).

Moreover, the mediating role of decision-making ability has been identified as significant in the financial capability and financial wellbeing of women in community-based organizations, emphasizing the importance of decision-making power for achieving economic wellbeing (Parvathy & Kumar, 2022). Consumer education has been found to play a crucial role in consumer engagement, challenging concerns about the switching risk and demonstrating a higher impact on brand engagement than on product-level engagement (Sánchez & Martínez, 2020). Additionally, education has been shown to empower women in terms of financial household decision-making and autonomy, particularly in the context of agricultural employment (Rashidi, 2022). However, barriers to financial inclusion, such as functional illiteracy, continue to hinder the last mile of financial inclusion, particularly in marginalized regions (Tiwari et al., 2019). In conclusion, while digital competency and financial education offer opportunities for empowering financial decision-making, challenges such as the digital divide and functional illiteracy need to be addressed to ensure inclusive and effective consumer empowerment in the digital age.

3.5. Educational Initiatives for Financial Literacy

Educational initiatives for financial literacy are crucial for promoting economic growth and sustainable development. The inclusion of financial literacy in national educational

policies, as emphasized in the NEP 2020, is essential for increasing public investments and improving economic growth ("Importance of inclusion of financial literacy in national educational policy: A study with salaried employees in Tamil Nādu", 2023). Initiatives such as the Jinhui Project in rural China have demonstrated the effectiveness of financial education activities in improving residents' financial literacy, particularly among disadvantaged groups (Zhang & Xiong, 2019). Financial literacy plays a significant role in effective decision-making, as evidenced by its association with financial attitude, behavior, and knowledge (Rai et al., 2019). Moreover, in the context of small and medium-sized enterprises (SMEs), financial literacy has been identified as a predictor of access to finance and financial risk attitude, highlighting its importance for business sustainability (Ye & Kulathunga, 2019).

Efforts to integrate financial literacy education into formal curricula have been observed in various contexts. For instance, the impact of secondary education on the level of financial literacy in Slovakia underscores the importance of educational initiatives in shaping individuals' financial knowledge and skills (Böhm et al., 2021). Additionally, the incorporation of financial literacy into specific academic disciplines, such as accounting and medical curricula, reflects the recognition of the need for formal financial education in specialized fields (Rakow, 2019; Jennings et al., 2019). Furthermore, case studies on financial literacy for elementary school students in Bandung City, Indonesia, highlight the importance of targeted educational initiatives for different age groups (Puspitarona et al., 2019).

In conclusion, educational initiatives for financial literacy encompass a wide range of efforts, from national policies to targeted programs for specific demographics. These initiatives are essential for equipping individuals with the knowledge and skills necessary to make informed financial decisions, ultimately contributing to economic stability and sustainable development.

3.6. Impact on Consumer Behavior and Financial Decision-making

The impact of various factors on consumer behavior and financial decision-making has been a subject of extensive research in recent years. Tan (2022) highlighted the limited impact of fintech in shaping consumer financial behaviors, shedding light on the evolving landscape of financial services. Furthermore, Sharma et al. (2023) emphasized the influence of behavioral factors on consumer financial decision-making, indicating the complexity of consumer choices in the financial domain. Additionally, Meneau & Moorthy (2021) delved into the role of emotions and personality traits in financial decision-making, particularly focusing on the decision-making power of Australian female consumers when purchasing financial products. This study provided insights into the interplay of rationality, emotions, and personality traits in shaping financial decision-making, offering valuable implications for financial institutions.

Moreover, Meneau & Moorthy (2021) underscored the mediating role of self-control in consumer financial behaviors, emphasizing the need to enhance financial products to positively influence consumer behavior drivers. Park (2021) also stressed the importance of consumer protection in financial decision-making, especially in the aftermath of global financial crises, highlighting the significance of self-determination and financial psychology in shaping financial behavior among young adult consumers. These studies collectively underscore the multifaceted nature of consumer financial decision-making, influenced by technological advancements, behavioral factors, and emotional and psychological dimensions.

In contrast, Bakar et al. (2020) emphasized the negative impact of financial illiteracy on personal and family finance, highlighting the potential consequences of uninformed financial decision-making. This underscores the critical role of financial education and literacy in empowering consumers to make informed financial choices. Additionally, Ratnawati et al. (2022) examined the mediating role of financial behavior in the influence of financial literacy and attitudes on investment decisions, further emphasizing the interconnectedness of these factors in shaping consumer financial choices.

In conclusion, the synthesis of these studies underscores the intricate interplay of various factors, including technological advancements, behavioral influences, emotional and psychological dimensions, and financial literacy, in shaping consumer behavior and financial decision-making. Understanding these multifaceted influences is crucial for policymakers, financial institutions, and educators to develop effective strategies and interventions to promote sound financial decision-making and consumer well-being.

4. Conclusion

The conclusion from this discussion is that financial literacy and digital technology play a crucial role in making financial decisions in the digital era. Research shows that good financial literacy can have a positive impact on an individual's financial well-being, especially in facing the economic challenges caused by the COVID-19 pandemic. Additionally, the increasing use of digital technology in financial services requires individuals to have a better understanding of the financial products and services offered in the market.

However, there are challenges in achieving optimal financial literacy in the digital era, such as the digital divide and lack of adequate financial literacy. Therefore, efforts to improve financial literacy, especially through educational initiatives, are critical. Financial literacy programs integrated into formal education curricula, as well as specific educational initiatives for various demographic groups, can help improve individuals' understanding and skills in managing their finances well.

The implication of the results of this research is that there needs to be greater attention to the integration of financial and digital literacy in the education curriculum and building community capacity. This effort will help people to be better prepared to face the challenges and opportunities in the digital era, and enable them to make better financial decisions.

Limitations of this study include limited access to relevant data and limited time to conduct a thorough literature review. In addition, there is a need for further, more in-depth research on the interactions between financial literacy, digital technology and consumer behavior in more specific contexts.

For future research, it is recommended to conduct more in-depth empirical studies to understand the impact of financial education initiatives on consumer behavior directly. Additionally, longitudinal research can be conducted to track changes in financial literacy and consumer behavior as digital technology develops. Thus, it is hoped that this follow-up research can provide a deeper understanding of how financial literacy and digital technology can support each other in advancing financial decisions and consumer welfare in this increasingly complex digital era.

6. References

- Anuradha, B. and Divya, D. (2022). Financial inclusion and its impact on women's empowerment in rural areas. *Quing International Journal of Commerce and Management*, 2(1), 7-13. <https://doi.org/10.54368/qijcm.2.1.0005>
- Anuradha, B. and Divya, D. (2022). Financial inclusion and its impact on women's empowerment in rural areas. *Quing International Journal of Commerce and Management*, 2(1), 7-13. <https://doi.org/10.54368/qijcm.2.1.0005>
- Bakar, N., Yasin, N., & Teong, N. (2020). Unfair contract terms in malaysian islamic banks: empowering bank consumers by islamic education ethics. *Humanities & Social Sciences Reviews*, 8(2), 13-24. <https://doi.org/10.18510/hssr.2020.823>
- Bakar, N., Yasin, N., & Teong, N. (2020). Unfair contract terms in malaysian islamic banks: empowering bank consumers by islamic education ethics. *Humanities & Social Sciences Reviews*, 8(2), 13-24. <https://doi.org/10.18510/hssr.2020.823>

- Becker-Olsen, K., Cudmore, B., & Hill, R. (2006). The impact of perceived corporate social responsibility on consumer behavior. *Journal of Business Research*, 59(1), 46-53. <https://doi.org/10.1016/j.jbusres.2005.01.001>
- Böhm, P., Bohmova, G., Šimková, V., & Gazdíková, J. (2021). The impact of secondary education on the level of financial literacy: the case of Slovakia. *Problems of Education in the 21st Century*, 79(1), 13-33. <https://doi.org/10.33225/pec/21.79.13>
- Divaeva, E., Kukhareno, O., & Giziayova, A. (2021). Considering susceptibility of individuals to digital finance as a factor of increasing its prosperity. *International Review*, (1-2), 137-145. <https://doi.org/10.5937/intrev2102139d>
- Dong, P. (2023). Financial market participation under the digital divide. *Frontiers in Business Economics and Management*, 8(1), 127-133. <https://doi.org/10.54097/fbem.v8i1.6054>
- Dong, P. (2023). Financial market participation under the digital divide. *Frontiers in Business Economics and Management*, 8(1), 127-133. <https://doi.org/10.54097/fbem.v8i1.6054>
- Elliott, K., Price, R., Shaw, P., Spiliotopoulos, T., Ng, M., Coopamootoo, K., ... & Moorsel, A. (2021). Towards an equitable digital society: artificial intelligence (ai) and corporate digital responsibility (cdr). *Society*, 58(3), 179-188. <https://doi.org/10.1007/s12115-021-00594-8>
- Fernández, M., Ramírez-Montoya, M., Ibarra-Vazquez, G., & Patiño, A. (2023). Digital competency as a key to the financial inclusion of young people in complex scenarios: a focus groups study. *Citizenship Social and Economics Education*, 22(1), 48-62. <https://doi.org/10.1177/14788047231170083>
- Fernández, M., Ramírez-Montoya, M., Ibarra-Vazquez, G., & Patiño, A. (2023). Digital competency as a key to the financial inclusion of young people in complex scenarios: a focus groups study. *Citizenship Social and Economics Education*, 22(1), 48-62. <https://doi.org/10.1177/14788047231170083>
- Gamble, K., Boyle, P., Yu, L., & Bennett, D. (2015). Aging and financial decision making. *Management Science*, 61(11), 2603-2610. <https://doi.org/10.1287/mnsc.2014.2010>
- Golden, W. and Cordie, L. (2022). Digital financial literacy. *Adult Literacy Education the International Journal of Literacy Language and Numeracy*, 4(3), 20-26. <https://doi.org/10.35847/wgolden.lcordie.4.3.20>
- Golden, W. and Cordie, L. (2022). Digital financial literacy. *Adult Literacy Education the International Journal of Literacy Language and Numeracy*, 4(3), 20-26. <https://doi.org/10.35847/wgolden.lcordie.4.3.20>
- Ihab, M., Ramadan, N., & Ahmed, H. (2020). Cybersecurity risks of blockchain technology. *International Journal of Computer Applications*, 177(42), 8-14. <https://doi.org/10.5120/ijca2020919922>
- Ilias, I. and A'zmi, A. (2022). Financial education and consumer empowerment: the development in malaysia with reference to the role of regulator. *International Journal of Academic Research in Business and Social Sciences*, 12(11). <https://doi.org/10.6007/ijarbss/v12-i11/14903>
- Ilias, I. and A'zmi, A. (2022). Financial education and consumer empowerment: the development in malaysia with reference to the role of regulator. *International Journal of Academic Research in Business and Social Sciences*, 12(11). <https://doi.org/10.6007/ijarbss/v12-i11/14903>
- Ilias, I. and A'zmi, A. (2022). Financial education and consumer empowerment: the development in malaysia with reference to the role of regulator. *International Journal of Academic Research in Business and Social Sciences*, 12(11). <https://doi.org/10.6007/ijarbss/v12-i11/14903>
- Jennings, J., Quinn, C., Ly, J., & Rehman, S. (2019). Orthopaedic surgery resident financial literacy: an assessment of knowledge in debt, investment, and retirement savings. *The American Surgeon*, 85(4), 353-358. <https://doi.org/10.1177/000313481908500424>
- Jia, T., Wang, C., Tian, Z., Wang, B., & Tian, F. (2022). Design of digital and intelligent financial decision support system based on artificial intelligence. *Computational Intelligence and Neuroscience*, 2022, 1-7. <https://doi.org/10.1155/2022/1962937>

- Klapper, L. and Lusardi, A. (2019). Financial literacy and financial resilience: evidence from around the world. *Financial Management*, 49(3), 589-614. <https://doi.org/10.1111/fima.12283>
- Lusardi, A. (2019). Financial literacy and the need for financial education: evidence and implications. *Swiss Journal of Economics and Statistics*, 155(1). <https://doi.org/10.1186/s41937-019-0027-5>
- Lusardi, A. and Mitchell, O. (2014). The economic importance of financial literacy: theory and evidence. *Journal of Economic Literature*, 52(1), 5-44. <https://doi.org/10.1257/jel.52.1.5>
- Meneau, L. and Moorthy, J. (2021). Struggling to make ends meet: can consumer financial behaviors improve?. *The International Journal of Bank Marketing*, 40(2), 263-296. <https://doi.org/10.1108/ijbm-12-2020-0595>
- Muti'ah, R., Ritonga, M., & Bangun, B. (2022). Increasing the human development index through the rural community literacy improvement program. *Journal of Social and Political Sciences*, 5(4). <https://doi.org/10.31014/aior.1991.05.04.377>
- Nurlaili, N., Faqih, M., Basri, M., & Larasati, K. (2021). Improving financial literacy in facing the era of society 5.0. *International Journal of Islamic Economics*, 3(2), 150. <https://doi.org/10.32332/ijie.v3i2.4142>
- Nurlaili, F., Asmoro, P., & Aini, E. (2022). Digital financial literacy and personal financial health during the covid-19 pandemic. *Mebis Journal (Management and Business)*, 7(1), 52-56. <https://doi.org/10.33005/mebis.v7i1.236>
- Ojeniyi, J., Edward, E., & Abdulhamid, S. (2019). Security risk analysis in online banking transactions: using diamond bank as a case study. *International Journal of Education and Management Engineering*, 9(2), 1-14. <https://doi.org/10.5815/ijeme.2019.02.01>
- Park, H. (2021). Financial behavior among young adult consumers: the influence of self-determination and financial psychology. *Young Consumers Insight and Ideas for Responsible Marketers*, 22(4), 597-613. <https://doi.org/10.1108/yc-12-2020-1263>
- Parvathy, V. and Kumar, J. (2022). Financial capability and financial wellbeing of women in community-based organizations: mediating role of decision-making ability. *Managerial Finance*, 48(9/10), 1513-1529. <https://doi.org/10.1108/mf-05-2021-0234>
- Puspitarona, D., Abdulhak, I., & Rusman, R. (2019). Financial literacy for elementary school students: case study of bandung city, indonesia. *International Journal of Learning Teaching and Educational Research*, 18(10), 292-307. <https://doi.org/10.26803/ijlter.18.10.19>
- Rai, K., Dua, S., & Yadav, M. (2019). Association of financial attitude, financial behaviour and financial knowledge towards financial literacy: a structural equation modeling approach. *Fiib Business Review*, 8(1), 51-60. <https://doi.org/10.1177/2319714519826651>
- Rakow, K. (2019). Incorporating financial literacy into the accounting curriculum. *Accounting Education*, 28(4), 384-400. <https://doi.org/10.1080/09639284.2019.1578247>
- Rashidi, A. (2022). Effect of education on women's autonomy in financial household decision-making in afghanistan. *American Journal of Youth and Women Empowerment*, 1(1), 6-13. <https://doi.org/10.54536/ajywe.v1i1.409>
- Sánchez, S. and Martínez, J. (2020). The more i know, the more i engage: consumer education's role in consumer engagement in the coffee shop context. *British Food Journal*, 123(2), 551-562. <https://doi.org/10.1108/bfj-05-2020-0401>
- Sharma, A., Hewege, C., & Perera, C. (2023). How do australian female consumers exercise their decision-making power when making financial product decisions? the triad of financial market manipulation, rationality and emotions. *The International Journal of Bank Marketing*, 41(6), 1464-1497. <https://doi.org/10.1108/ijbm-09-2022-0408>
- Soetjipto, B. and Restuningdiah, N. (2022). The role of financial behavior as a mediator of the influence of financial literacy and financial attitudes on msme investment decisions in indonesia. *Journal of Social Economics Research*, 9(4), 193-203. <https://doi.org/10.18488/35.v9i4.3231>

- Tan, G. (2022). The 'fintech revolution' is here! the disruptive impact of fintech on retail financial practices. *Finance and Society*, 8(2), 129-148. <https://doi.org/10.2218/finsoc.7763>
- Tian, X., Zhang, Y., & Qu, G. (2022). The impact of digital economy on the efficiency of green financial investment in china's provinces. *International Journal of Environmental Research and Public Health*, 19(14), 8884. <https://doi.org/10.3390/ijerph19148884>
- Tiwari, J., Schaub, E., & Sultana, N. (2019). Barriers to "last mile" financial inclusion: cases from northern kenya. *Development in Practice*, 29(8), 988-1000. <https://doi.org/10.1080/09614524.2019.1654432>
- Ye, J. and Kulathunga, K. (2019). How does financial literacy promote sustainability in smes? a developing country perspective. *Sustainability*, 11(10), 2990. <https://doi.org/10.3390/su11102990>
- Zanariasti, P. and Ikasari, N. (2020). Analysis of financial literacy among Indonesian first-semester students: a study in Universitas Indonesia, Bogor Agricultural Institute and Bandung Institute of Technology.. <https://doi.org/10.4108/eai.30-10-2019.2299410>
- ZHang, H. and Xiong, X. (2019). Is financial education an effective means to improve financial literacy? evidence from rural china. *Agricultural Finance Review*, 80(3), 305-320. <https://doi.org/10.1108/afr-03-2019-0027>