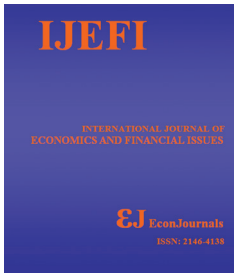

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Information and Communication Technology: A Gate or Gateway to Advance Financial Literacy

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ABSTRACT

Fintech offers unique opportunities to advance financial literacy education, however its broader application is dependent on a range of socio-economic factors. This study aimed to investigate. This study aimed to uncover to what extent certain socio-economic conditions are prevalent in a developing country, such as South Africa, which are necessary for fintech-based financial literacy education interventions. To this end, a quantitative research design was used with a positivist approach with a total of 1,141 respondents. The findings indicate that South Africa possesses a solid foundation for advancing digital financial literacy, supported by widespread internet access, high levels of digital competence, and a reasonable prevalence of financial literacy skills. While current usage of digital financial education tools and apps remains limited, those who do engage with them recognize their value and potential impact. However, efforts are still needed to boost public interest and confidence in these platforms. This study could attract the interest of policymakers, researchers, advocacy groups, financial institutions and fintech companies that are intent on developing more user-friendly and accessible digital financial literacy educational content.

Keywords: Digital Literacy, Education, Financial Literacy, Fintech
JEL Classifications: D14, G53, I22

1. INTRODUCTION

Economist and former chair of the Federal Reserve of the United States, Bernanke (2011:2), stated: "Well-informed consumers, who can serve as their own advocates, are one of the best lines of defence against the proliferation of financial products and services that are unsuitable, unnecessarily costly, or abusive." Therefore, financial literacy is widely regarded as a critical enabler for improved financial inclusion, informed financial decision-making and ultimately greater financial well-being and financial stability (Khan et al., 2022; Kim et al., 2018; Lusardi and Mitchell, 2014). Conceptually, financial literacy is a multidimensional concept rooted in the core themes of financial knowledge, self-efficacy, financial attitude, and financial behaviour (Goyal and Kumar, 2020). As a globally recognised essential life skill for navigating the financial landscape in the 21st century, financial literacy plays an instrumental role in enhancing both personal and societal financial wellbeing (G20, 2021; Du Preez and Ferreira-Schenk, 2024). Despite its acknowledged importance, extensive research continues to highlight persistently low levels of financial literacy worldwide (Lusardi and Messy, 2023; Lusardi and Mitchell, 2014). Hence, the continued calls for more financial literacy education to stimulate improved financial behaviour (Lusardi, 2019).

Moreover, technological advancements in the financial industry, often referred to as fintech, are reshaping key domains like retail banking, investment management, and payment systems (Koskelainen et al., 2023). Despite these advancements many individuals are still financially underserved and remain unbanked without the ability to insure against risks, save, invest, or transform their income into wealth (Sant'Anna and Figueiredo, 2024). This is a concern because access to financial services

is widely acknowledged as a cornerstone of economic and social progress. Individuals and businesses lacking inclusion in mainstream financial systems face heightened risks such as social marginalisation, limited economic mobility, and lost business opportunities (Sha'ban et al., 2020). Fintech can play a significant role in advancing financial inclusion, and financial literacy since many start-ups and platforms are employing technology to simplify personal finance, streamline financial planning processes and to encourage and facilitate financial education (Croitoru et al., 2025; Panos and Wilson, 2020). Through digital platforms, individuals who previously had limited access to financial education can now benefit from a wealth of resources designed to enhance their financial understanding and skills.

However, the effectiveness of fintech-related interventions to advance financial literacy and ultimately financial inclusivity and greater well-being is dependent on a range of socio-economic factors. These include access to the internet, digital financial literacy, and financial literacy skills with the capacity to comprehend fundamental financial concepts and make informed financial decisions (Andreou and Anyfantaki, 2021). Many prior studies have focused on the role of financial literacy in adopting various fintech products (Khan et al., 2023), while less studies have focused on the effectiveness of ICT to enhance financial literacy education, specifically in a developing economy. It was eloquently stated in the OECD Digital Delivery of Financial Education: Design and Practice Report (OECD, 2021:29) that "despite the increasing use of digital tools, financial literacy policy makers are aware that digital delivery of financial education is not a silver bullet". This begs the question whether fintech, specifically in a developing country, can meaningfully advance financial literacy education or if existing barriers may hinder its effectiveness. Drawing on the results of a study commissioned by the Financial Sector Conduct Authority (FSCA) (2025), investigating the feasibility of digital financial literacy and education platforms, this article explores the multifaceted role of ICT in the financial literacy education landscape in South Africa, weighing its enabling benefits against its potential hindrances.

2. LITERATURE REVIEW

In the contemporary era, ICT has become an integral part of our daily lives. As mentioned, the technology-driven transformation in the financial services sector revolution has greatly changed the financial landscape. The key forces at work during the ICT revolution are technology innovation, process disruption and service transformation (Gomber et al., 2018). For example, perceived ease of use, trust, and the social influence and opinions of others were found to be factors influencing Generation Z's willingness to adopt mobile payments (Lisana, 2024). From online banking to financial planning applications, ICT has not only revolutionised the way we manage our finances, but also how individuals acquire much needed financial education.

Likewise, ICT enables personalised financial management through apps and software that track income, expenses, and investments. Tools like Mint and YNAB (You Need A Budget) help users create and stick to budgets, making financial management straightforward and less daunting (Tong, 2022). Mobile banking apps and online financial services have opened doors for people in remote or underserved areas, enabling them to participate in the financial system without the need for physical bank branches. This accessibility is crucial for promoting financial inclusion, as it allows individuals to perform transactions, save money, and access credit facilities efficiently. Emphasising the importance of digital finance, Shen et al. (2020) consider the level of internet access and usage as a mediator between financial literacy and financial inclusion.

The advent of ICT has brought about transformative and impactful changes in the management of one's personal finances (Koskelainen et al., 2023) and consequently in financial education. By leveraging digital platforms, individuals can access a wealth of financial knowledge and tools that cater to diverse learning styles and needs, making it more accessible, engaging, and personalised (Golden and Cordie, 2022). From comprehensive online courses to interactive applications, ICT has democratised financial education, allowing individuals from all walks of life to enhance their financial literacy. Moreover, the ability to manage finances through personalised applications (apps) and engage with supportive online communities has further empowered individuals to take control of their financial futures (Koskelainen et al., 2023).

Drawing on social learning theory, ICT-enabled platforms such as online forums and social media groups focused on financial literacy can foster a sense of community, engagement and support. In their study Yanto et al (2021) concluded that the success in improving the quality of students' financial behaviour is largely influenced by social media, their financial attitude and peer influence. Individuals can share experiences, ask questions, and give advice, fostering a collaborative learning environment. This collective wisdom, that could be gained from crowds (Truong and Du Nguyen, 2024), as for instance, found on social media groups, can be particularly beneficial for those who feel isolated or overwhelmed by financial concepts.

One of the most significant advantages of ICT is the unprecedented access to financial information (OECD, 2021). Technology enables individuals to learn in self-directed learning environments allowing them to define their own goals, manage their schedules, select effective learning strategies, and assess their progress to ultimately foster a stronger sense of control and ownership over their educational journey (Golden and Cordie, 2022). Financial literacy websites, blogs, and online courses provide a wealth of knowledge at one's fingertips. Access to, and using technology for financial literacy education, is as crucial as having reading, writing and numeracy skills (Golden and Cordie, 2022). Moreover, financial news applications (apps) and News Analytics (NA) technology keep users updated with the latest market trends, helping them make informed decisions (Mitra and Mitra, 2012).

By delivering information in a dynamic, engaging, and visually appealing manner, learning materials can become more inclusive and easier to understand for a broader audience (OECD, 2021). ICT offers a variety of interactive tools that enhance the learning experience. For instance, financial literacy apps often include

quizzes, simulations, and calculators that make learning engaging and practical. Simulations, games, and virtual environments can create realistic financial scenarios, allowing individuals to participate in decision-making exercises within a risk-free setting (Karlan et al., 2014). Another example is investment simulators that allow users to practice stock trading without real financial risk, thereby building confidence and competence (Anginer et al., 2024).

Furthermore, digital financial literacy programmes tailored to various demographics can address specific needs and challenges. For example, tailored content for women, youth, and low-income groups can help bridge the gap in financial literacy levels, ensuring that no segment of the population is left behind in the digital financial revolution. It is also true that when financial literacy levels increase, the demand for financial products rises, which in turn boosts financial inclusion (Khan et al., 2022).

In a comprehensive literature review, Menberu (2024) finds that although financial literacy is crucial for informed financial decision-making, individuals in developing economies still face challenges in accessing and understanding technology-facilitated financial knowledge. While having access to vast amounts of information is beneficial, it can also lead to information overload. The sheer volume of available resources can be overwhelming, making it difficult for individuals to discern which sources are credible and relevant, and even cause some individuals to avoid making decisions altogether (Agnew and Szykman, 2011).

While information overload poses some challenges, many individuals in developing countries still do not have access to the internet and online information. The digital divide refers to the gap between those who have access to modern ICT, internet, and connectivity and those who lack such access (Faloye and Ajayi, 2022). Socioeconomic factors, geographic location (Golden and Cordie, 2022), and age can all contribute to this divide. Individuals without reliable internet access or the necessary digital skills may find it challenging to utilise ICT to improve their financial literacy status. This barrier can exacerbate existing inequalities and deter some communities from access to financial education.

The rise of online financial management tools and resources also brings about security concerns. Cyber threats, such as identity theft and phishing attacks, pose significant risks to users. These threats which are underscored by the issues of trust and security of fintech can deter individuals from engaging with online financial tools, limiting their opportunities to become financially literate (Jafri et al., 2024). Improved financial literacy is, therefore, crucial to mitigate potential digital financial risks (Ogunola et al., 2024). To address online security concerns, users should be educated about online safety practices. Using strong passwords, enabling two-factor authentication, and being vigilant about suspicious activities can mitigate risks. Consequently, financial literacy programmes should include a component on cybersecurity to ensure that individuals can safely navigate the digital landscape (Lisana, 2024).

Given the benefits and barriers of ICT in financial literacy education, it is crucial to strike a balance, to maximise the advantages and mitigate the challenges. Individuals should seek out reputable sources, verify the reliability of the online resources (Menberu, 2024) and diversify their learning methods. While digital education offers the flexibility of self-pace learning and access to a wide variety of learning resources, traditional face-to-face classroom teaching positively impacts on the development of learners' social and communication skills (Karpliuk et al., 2024). The hybrid approach of combining ICT with traditional learning approaches, such as books and in-person workshops, can provide a more holistic understanding of financial concepts (Xie et al., 2023). Nonetheless, enhancing digital literacy is thus essential to bridge the digital divide. Educational programmes focusing on basic digital skills can empower underserved populations to leverage ICT for improving their financial literacy. Where there is a lack of digital access, community-oriented spaces including libraries, community centres, and schools can play a pivotal role in providing access and training (Choudhary and Jain, 2023). In addition to the previously mentioned barriers, a significant challenge identified by participants in Lee's (2019) study was attracting attention to digital financial literacy educational resources. The dilemma, especially in developing countries, is that without internet access or digital acumen, individuals cannot learn about online financial education tools.

3. RESEARCH DESIGN

The study adopted a positivist paradigm, utilising a quantitative non-experimental design to comprehensively address the research objective. The research methodology combined self-administered and interviewer-assisted (Computer Aided Telephone Interviews - CATI) data collection techniques. Adult participants (18 years and older) completed an online questionnaire. Using pertinent research questions, key areas were investigated, including access and usage of information and communication technology (ICT), digital literacy, financial digital literacy, the use of mobile applications and e-learning platforms.

3.1. Sample Design

A total of 1,144 South African respondents participated in the study. An inclusion criterion was set, requiring respondents to have Internet access. This criterion ensured accurate and constructive reporting, as participants' online access and experience positioned them to provide well-informed responses to the research questions in the study instrument. The demographic distribution is presented in Table 1. Of the 1,144 respondents, the majority were female (56.3%), aged between 25 and 44 years, with most identifying as Black African (84.1%). More than a third of the respondents (39.8%) resided in Gauteng province, which has an established digital infrastructure and dense urban population, which generally facilitate greater connectivity. Overall, the sample can be considered broadly representative of the South African population.

3.2. Ethical Considerations

The FSCA appointed the Bureau of Market Research (BMR) to carry out the project and data collection process. The study was approved by the Research Ethics Review Committee of the BMR to ensure that the research is conducted in a way that respects the rights and dignity of the respondents. Potential respondents were

Table 1: Summary of respondent demographic information

Demographic variable	%
Gender	
Female	56.3
Male	41.6
Prefer not to answer	2.1
Age	
18-19	1.9
20-24	9.5
25-29	20.2
30-34	17.1
35-39	16.6
40-44	11.2
45-49	7.2
50-54	6.4
55-59	4.6
60-64	2.8
65+	2.1
Prefer not to answer	0.5
Population group	
African	84.1
White	7.5
Coloured	5.7
Indian	1.3
Other	0.1
Prefer not to answer	1.3
Province	
Eastern Cape	7.1
Free State	4.9
Gauteng	39.8
Kwa-Zulu Natal	11.8
Limpopo	9.9
Mpumalanga	11.7
Northern Cape	2.8
Northwest	5.5
Western Cape	6.5

presented with a letter of introduction, ensuring that they are fully informed about the study, its potential risks and benefits, and that they provide their informed consent before participating.

3.3. Data Analysis and Quality

The data analysis procedure included editing, coding, and analysing the information gathered from the completed surveys. The statistical data was analysed using the Statistical Package for Social Sciences (SPSS Statistics v29). After the data analysis procedure, the data underwent diagnostic analysis to determine its quality. The data was analysed for reliability, validity, structural integrity, and representativeness. Reliability was determined using Cronbach's Alpha test, with results ranging between 0.700 and 0.866, indicating high levels of data consistency. Validity was assessed through Principal Component Analysis (PCA), with component loadings ranging between 0.691 and 0.839, indicating highly valid survey results. Structural integrity was assessed using Neural Network analyses, with 66.25% of relationships in the underlying data structure successfully identified, indicating a fairly high level of structural integrity. This suggests an underlying logical structure in the survey data, allowing for higher-order inferential analyses and data modelling.

Representivity was also assessed to determine if the survey population is sufficiently representative of the sampling population. Bayesian modelling was used to test all interval and ratio variables, with statistical inference results showing large values, indicating a tendency to normal distributions. This indicates that the sample size was large enough to be representative of the sample population. The FSCA Digital Financial Literacy survey thus demonstrated high reliability, validity, structural integrity, and representativeness, emphasising the significance of reliable and valid data for valid conclusions.

4. RESEARCH RESULTS

The answers to key questionnaire items are presented below, beginning with the respondents' access and usage of ICT, followed by their view of how financially literate they are. These responses provide the background to determine whether ICT can meaningfully advance financial literacy education, or if existing barriers may hinder its effectiveness.

4.1. Access and Usage of Information and Communication Technology (ICT)

4.1.1. Research Question 1: Do you have access to the Internet?

All of the respondents (n=1141) confirmed that they have access to the internet. This finding aligns with the qualifying inclusion criteria which was tailored to only survey respondents who have access to the internet. The sample, therefore, represented individuals who are digitally connected.

Most respondents who participated in the study access the internet from home and primarily use a smartphone device that they do not share with anyone else to access the Internet.

4.1.2. Research Question 2: How often do you use the Internet?

The frequency of internet use is significant, with almost half (47.9%) of the respondents using the Internet almost all the time, while 29.6% use the internet daily or almost daily and 17.5% several times each day. These statistics reflect a significant daily internet penetration rate.

4.1.3. Research Question 3: Which of these activities do you mainly use the internet for?

The main activities that the internet is used for are communication (87.9%), and social media (77%), Importantly, as illustrated in Figure 1, 69% of respondents use the internet for banking and other financial services, and 64.3% for education and learning activities.

4.1.4. Research Question 4: How many applications (apps) do you currently have on your mobile device?

When focusing on mobile application usage, the findings show that 45% of respondents have more than 20 applications on their devices (Figure 2), and over 88% use mobile applications daily.

4.1.5. Research Question 5: What typical applications do you currently have on your mobile device?

The study found that social media (89,5%), banking (81.6%) and entertainment (74.6%) were the top three mobile applications used by respondents. As illustrated in Figure 3, finance apps (25%) and education apps (31%) are at the lower end of applications stored on digital devices.

Figure 1: Key internet activities and their prevalence among respondents

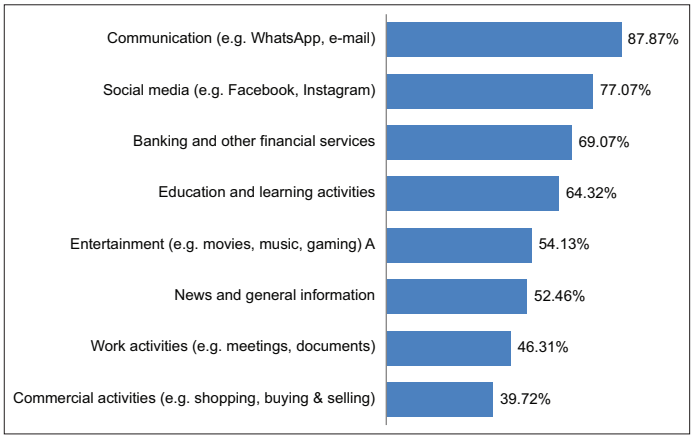


Figure 2: Number of applications on mobile device (n=1045)

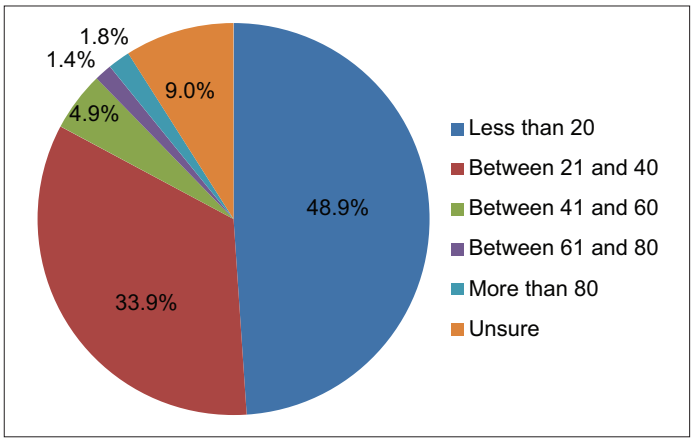
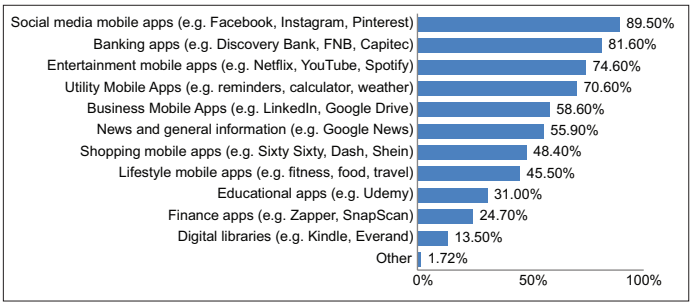


Figure 3: Types of applications on mobile devices



While 31% of respondents reported having educational apps, only 10% of respondents have engaged with financial literacy mobile applications in the past. Of these, a low usage rate was recorded with about a quarter of the respondents 'often' using the financial literacy apps. This translates to less than 3% of the respondents engaging with financial literacy apps on a regular basis. This highlights the promising potential of fintech-driven financial education initiatives, while also underscoring the current challenges in motivating individuals to adopt and regularly engage with financial literacy apps.

Therefore, this study attempted to gain more insights about financial literacy applications. The study surveyed respondents about their use of financial literacy applications, focusing on mobile apps that aid in understanding and using financial skills like budgeting, saving, and investing. Some apps were praised for their user-friendliness, daily updates, discounts, and easy budgeting tools. However, others were criticised for their advertisements, cost, data intensiveness, lack of search/AI features, irrelevant information for Africa, complexity, and lack of rewards for course completion. Moreover, the majority of respondents showed a preference for videos and animation as well as articles and blog posts when using mobile apps.

It was also necessary to assess the respondents' familiarity and use of other digital financial tools alongside mobile applications.

4.2. Digital Financial Tools

4.2.1. Research Question 6: Which of the following digital financial tools are you familiar with?

When shifting focus from a broader evaluation of application usage to the use of digital financial tools, the findings reveal that respondents are most familiar with mobile banking apps (89.1%), online banking (82.3%) and E-wallets (72.8%). As illustrated in Figure 4, respondents are least familiar with cryptocurrency, budgeting and investment apps.

Given the high level of internet usage and extensive use of digital financial tools it was expected that respondents would also be digitally literate.

4.3. Digital Literacy

As illustrated in Figure 5, the respondents were asked a series of questions pertaining to their ability to find, evaluate and communicate information using digital media platforms (digital literacy). From the self-assessment it appears that respondents reported strong digital literacy skills, with the highest mean score for communicating online (4.48), followed by using devices for personal and work tasks (4.42) and accessing information on the internet (4.42). Skills such as changing device settings (4.34) and practising online safety (4.32) were also rated highly. In contrast, lower scores were recorded for trust in digital engagements (3.66) and acceptance of companies using personal data (3.58), indicating a gap between digital competence and trust-related attitudes.

Regarding online safety, respondents generally seem to practice sound online safety since a very high percentage of respondents (88%) confirmed the use of strong passwords and 55% of respondents indicated that they avoid suspicious links and downloads. The online accounts of about two-thirds of respondents may be at risk due to irregular updates of antivirus software and not using two-factor authentication (2FA) as an additional security layer.

4.4. Financial Literacy

4.4.1. Research Question 7: How would you rate your financial knowledge and skills in the management of personal finances? (e.g. creating a budget, build up savings, debt management and start an investment strategy)

Most respondents (57.4%) rated their financial knowledge and skills as 'excellent' and 'good'. Approximately 25% of respondents

indicated that they knew enough about personal financial management to be considered competent.

4.4.2. Research Question 8: Overall, how confident are you that you are doing a good job of managing your finances?

However, when it comes to the confidence ratings of respondents in doing a good job of managing their finances, less confident responses were notable. Only one in every five respondents (23.0%) is 'completely' confident that they are managing their finances well. This again illustrates an opportunity for more online financial literacy education initiatives. Especially since subjective ratings could be indicative of over confidence and a lack of financial knowledge (Hui et al., 2016).

5. DISCUSSION

A significant portion of the research participants were aged between 25 and 44. More than 95% of respondents reported consistent internet access, which is a fundamental enabler for digital financial literacy education initiatives. The majority of respondents were already using the internet for banking and other financial services as well as education and learning activities. The research revealed that among installed mobile apps, social media and banking apps emerged as the most popular, while only one in three participants had educational apps installed on their mobile devices. When focusing on financial literacy education apps, the research showed that several apps received positive feedback for their user-friendliness, daily updates, discounts, and easy budgeting tools. However, others were criticised for excessive advertising, high costs, data-heavy usage, and content that lacked relevance.

Encouragingly, most respondents reported strong digital and financial literacy skills, which allow them to make informed financial decisions, understand risks, and manage resources effectively in a digital context. Overall, the findings suggest that South Africa offers a conducive environment for tailored digital financial literacy education. However, despite this readiness, the adoption and usage of financial literacy tools and applications remain comparatively low.

While this study offers meaningful insights, some limitations must be acknowledged. The use of online surveys may have introduced sampling bias, particularly through the underrepresentation of rural communities and individuals without reliable internet access. Additionally, incomplete data from some respondents, as well as the use of self-reported information, may have affected the precision of certain analyses. These factors warrant consideration when interpreting the findings. To build on this work, future research could adopt more inclusive sampling strategies to capture a broader and more representative demographic. Exploring participants' learning preferences and identifying priority content areas for financial literacy interventions could also yield actionable findings. Moreover, incorporating qualitative approaches may enrich the data by uncovering personal circumstances and motivations, ultimately supporting the development of customised digital

Figure 4: Usage of digital financial tools

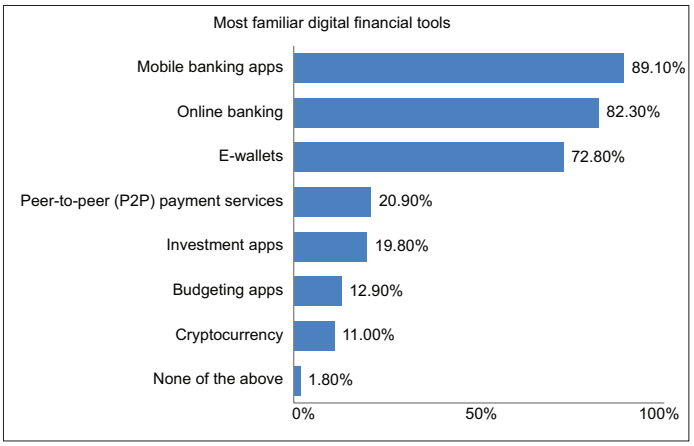
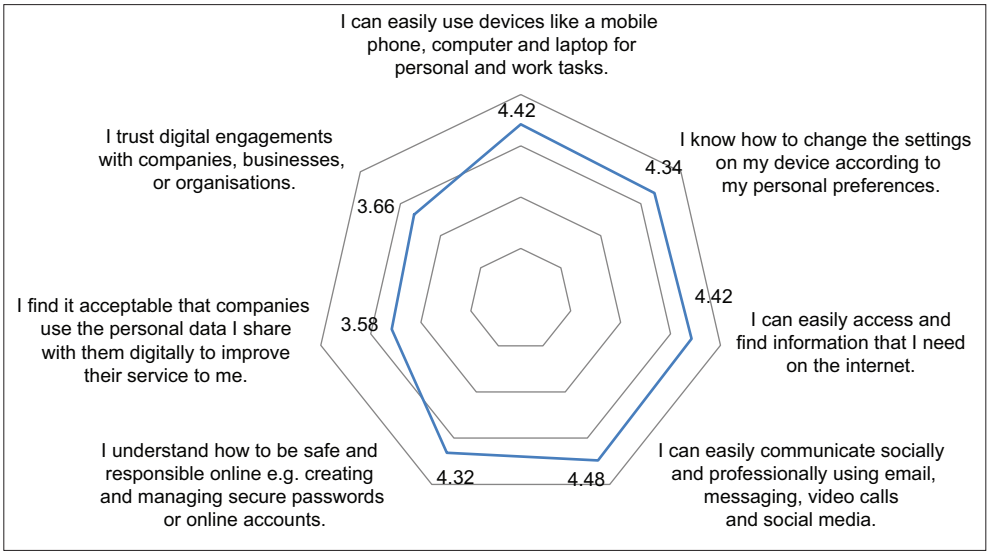


Figure 5: Digital literacy assessment



Scores are measured on a five-point Likert scale, where higher values indicate stronger agreement or higher proficiency. Scale anchor: 1 = Strongly disagree, 5 = Strongly agree

financial literacy education initiatives. Despite its limitations, this study makes a valuable contribution to the evolving landscape of digital financial literacy education.

6. CONCLUSION

In conclusion, ICT has the potential to be both an aid and a barrier in becoming financially literate. The key lies in how it is utilised. By leveraging the benefits and addressing the barriers, ICT can play a transformative role in enhancing financial literacy. As we continue to advance technologically, it is imperative to ensure that everyone has the opportunity and skills to benefit from these advancements, paving the way for a more financially literate society (Way and Wong, 2010). The research findings show that key socio-economic factors such as high internet usage, digital literacy and certain financial literacy skills are reasonably prevalent in South Africa to aid fintech in guiding financial literacy education. Furthermore, the usage of digital financial literacy education tools and applications remain low although those who engage with these have highlighted its usefulness and potential. However, more can be done to generate interest in such tools and to ensure secure online environments where individuals will feel comfortable to capture their personal details and information.

Therefore, this study could attract the interest of policymakers, government agencies, research institutions, educators, advocacy groups, financial institutions and fintech companies who could use this information towards better understanding the potential of user-friendly, tailored and accessible digital financial literacy educational content. This study contributes to the body of research in this limited but rapidly growing field of research exploring fintech as an enabler for financial literacy education.

7. FUNDING

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REFERENCES

Agnew, J., Szykman, L. (2011), Annuities, financial literacy and information overload. In: Mitchell, O.S., Lusardi, A., editors. Financial Literacy: Implications for Retirement Security and the Financial Marketplace. Oxford: Oxford University Press. p158-178.

Andreou, P.C., Anyfantaki, S. (2021), Financial literacy and its influence on internet banking behavior. European Management Journal, 39(5), 658-674.

Anginer, D., Piza, C., Ray, S., Xu, L. (2024), Trading simulations and real money outcomes. Journal of Behavioral Finance, 25(4), 436-448.

Bernanke, B.S. (2011), Statement by Ben S. Bernanke Chairman Board of Governors of the Federal Reserve System provided for the record of a hearing conducted by the Subcommittee on Oversight of Government Management, the Federal Workforce, and the District of Columbia of the Committee on Homeland Security and Governmental Affairs U.S. Senate. Washington, D.C.: Board of Governors of the Federal Reserve System.

Choudhary, H., Jain, H. (2023), Addressing financial exclusion through financial literacy training programs: A systematic literature review. Empirical Research in Vocational Education and Training, 15(1), 1-18.

Croitoru, I.M., Dragan, P.P., Ignat, N.D., Jumanca, R. (2025), Exploring financial literacy in higher education with the help of FinTech: A bibliometric analysis of linkages to access, behavior, and well-being through digital innovation. FinTech, 4(1), 1-17.

Du Preez, M., Ferreira-Schenk, S.J. (2024), Demographic and sociocultural determinants of financial literacy in South Africa. International Journal of Economics and Financial Issues, 14(2), 111-119.

Faloye, S.T., Ajayi, N. (2022), Understanding the impact of the digital divide on South African students in higher educational institutions. African Journal of Science, Technology, Innovation and Development, 14(7), 1734-1744.

Financial Sector Conduct Authority (FSCA). (2025), Digital Financial Literacy and Education Feasibility Study. South Africa: FSCA.

G20. (2021), Italian G20 Presidency Third Finance Ministers and Central Bank Governors Meeting Communiqué. Available from: https://www.g20italy.org/wp-content/uploads/2021/07/communiquethird-g20-fmcbg-meeting-9-10-july-2021.pdf [Last accessed on 2025 Aug 11].

Golden, W., Cordie, L. (2022), Digital financial literacy. Adult Literacy Education, 4(3), 20-26.

Gomber, P., Kauffman, R.J., Parker, C., Weber, B.W. (2018), On the fintech revolution: Interpreting the forces of innovation, disruption, and transformation in financial services. Journal of Management Information Systems, 35(1), 220-265.

Goyal, K., Kumar, S. (2020), Financial literacy. A systematic review and bibliometric analysis. International Journal of Consumer Studies, 45(1), 80-105.

Hui, T.S.W., Nguyen, C., Palameta, B., Gyarmati, D., Wagner, R.A., Rose, N., Llp, F. (2016), The Role of Financial Literacy in Financial Decisions and Retirement Preparedness among Seniors and Near-Seniors. Ontario: Social Research and Demonstration Corporation.

Jafri, J.A., Amin, S.I.M., Rahman, A.A., Nor, S.M. (2024), A systematic literature review of the role of trust and security on Fintech adoption in banking. Heliyon, 10(1), 1-20.

Karlan, D., Ratan, A.L., Zinman, J. (2014), Savings by and for the poor: A research review and agenda. The Review of Income and Wealth, 60(1), 36-78.

Karpliuk, S., Moyseyenko, I., Lysenko, T., Moroz, O., Protas, O. (2024), The role of ICT in education: Comparing virtual and traditional learning methods. Multidisciplinary Reviews, 8, 1-8.

Khan, F., Siddiqui, M.A., Imtiaz, S. (2022), Role of financial literacy in achieving financial inclusion: A review, synthesis and research agenda. Cogent Business and Management, 9, 1-37.

Khan, M.T.I., Liew, T.W., Lee, X.Y. (2023), Fintech literacy among millennials: The roles of financial literacy and education. Cogent Social Sciences, 9(2), 1-16.

Kim, M., Zoo, H., Lee, H., Kang, J. (2018), Mobile financial services, financial inclusion, and development: A systematic review of academic literature. The Electronic Journal of Information Systems in Developing Countries, 84(5), 1-17.

Koskelainen, T., Kalmi, P., Scornavacca, E., Vartiainen, T. (2023), Financial literacy in the digital age – a research agenda. Journal of Consumer Affairs, 57(1), 507-528.

Lee, H.W. (2019), Applying online educational technology to foster financial literacy: Financial-institution leaders' insights. The Qualitative Report, 24(10), 2625-2654.

Lisana, L. (2024), Understanding the key drivers in using mobile payment among Generation Z. Journal of Science and Technology Policy Management, 15(1), 122-141.

Lusardi, A. (2019), Financial literacy and the need for financial education: Evidence and implications. Swiss Journal of Economics and Statistics, 155(1), 1-8.

Lusardi, A., Messy, F.A. (2023), The importance of financial literacy and its impact on financial wellbeing. Journal of Financial Literacy and Wellbeing, 1(1), 1-11.

Lusardi, A., Mitchell, O.S. (2014), The economic importance of financial literacy: Theory and evidence. Journal of Economic Literature, 52(1), 5-44.

Menberu, A.W. (2024), Technology-mediated financial education in developing countries: A systematic literature review. Cogent Business and Management, 11(1), 2294879.

Mitra, L., Mitra, G. (2012), Applications of news analytics in finance: A review. The Handbook of News Analytics in Finance. New Jersey: Wiley.

OECD. (2021), Digital Delivery of Financial Education: Design and Practice. Available from: https://www.oecd.org//financial/education/digital-delivery-of-financial-education-design-and-practice.htm

Ogunola, A.A., Sonubi, T., Toromade, R.O., Ajayi, O.O., Maduakor, A.H. (2024), The intersection of digital safety and financial literacy: Mitigating financial risks in the digital economy. International Journal of Science and Research Archive, 13(2), 673-691.

Panos, G.A., Wilson, J.O. (2020), Financial literacy and responsible finance in the FinTech era: Capabilities and challenges. The European Journal of Finance, 26(4-5), 297-301.

Sant'Anna, D.A., Figueiredo, P.N. (2024), Fintech innovation: Is it beneficial or detrimental to financial inclusion and financial stability? A systematic literature review and research directions. Emerging Markets Review, 60, 1-21.

Sha'ban, M., Girardone, C., Sarkisyan, A. (2020), Cross-country variation in financial inclusion: A global perspective. European Journal of Finance, 26(4-5), 319-340.

Shen, Y., Hueng, C.J., Hu, W. (2020), Using digital technology to improve financial inclusion in China. Applied Economics Letters, 27(1), 30-34.

Tong, M.P. (2022), Personal Finance Management Mobile Application with Chatbot. A Report Submitted to Universiti Tunku Abdul Rahman in Partial Fulfilment of the Degree of Bachelor of Information Systems (Honours).

Truong, H.B., Du Nguyen, V. (2024), A new method for enhancing collective intelligence using expert's knowledge. Journal of Information and Telecommunication, 8(4), 531-547.

Way, W.L., Wong, N. (2010), Harnessing the Power of Technology to Enhance Financial Literacy Education and Personal Financial Well-Being: A Review of the Literature, Proposed Model, and Action Agenda. Centre for Financial Security, University of Wisconsis-Madison.

Xie, T., Wang, X., Cifuentes-Faura, J., Xing, Y. (2023), Integrating immersive experience into hybrid education: A case study in fintech experimental education. Scientific Reports, 13(1), 1-13.

Yanto, H., Ismail, N., Kiswanto K., Rahim, N.M., Baroroh, N. (2021), The roles of peers and social media in building financial literacy among the millennial generation: A case of Indonesian economics and business students. Cogent Social Sciences, 7(1), 1-15.