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## Digital Financial Literacy: A Systematic Review

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**Abstract: Objectives:** This study aims to conceptualise and operationalise the concept of digital financial literacy for effective incorporation as a component of financial literacy. **Prior Work:** As the financial landscape continues to evolve, the financial capabilities required to navigate it have also evolved to require digital financial skills. Digital financial skills have become a necessary skill for individuals to navigate online retail platforms, understand online information to make informed financial decisions, and make purchases and payments online without losing money or exposing confidential information. There is still a lack of literature on how digital financial literacy should be measured. **Approach:** A systematic literature review was conducted on 83 articles retrieved from the Scopus, Web of Science, and OECD databases using a PRISMA Protocol. **Results:** The study established digital financial knowledge, digital financial behaviour, digital financial attitude, digital risk management, access, and utilisation of digital financial services as major dimensions for measuring digital financial literacy. **Implications:** Effective definition and measurement of digital financial literacy. **Value:** The study recommends the incorporation of digital financial literacy as a component of financial literacy. Continuous and updated research on financial literacy and digital financial literacy is essential as the financial landscape continues to change.

**Keywords:** financial literacy; digital financial skills; financial wellbeing; digital financial behaviour; digital financial knowledge

**JEL Classification:** O

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## 1. Introduction

As the digital financial landscape continues to evolve, financial literacy has evolved to accommodate emerging trends driven by the expansion of digital finance, and the importance of digital financial literacy is increasingly recognised for individual financial wellbeing, entrepreneurial success and enhancing organisational resilience in a competitive business environment (Purwoto, Rahmawati, Rahayu & Abhedananda 2025). Individuals around the world generally demonstrate lower levels of financial literacy (Organisation for Economic Co-operation and Development (OECD) 2024) hence, the introduction of new financial products powered by destructive fourth industrialisation technology like artificial intelligence, blockchain, generative artificial intelligence, cloud computing, internet of things, neural networks, among other technologies, often exposes individuals and entrepreneurs to fraud, cybercrime, and financial loss.

The post-COVID-19 pandemic is also characterised by financial institutions digitalising their services and operations, leading to the introduction of more complex financial services and a change in the financial landscape to suit the new normal (Fessler, Jelovsek & Silgoner, 2020; Gumbo, 2023). Financial innovations in the financial industry include e-payment systems, peer-to-peer lending platforms, automated portfolio managers (robo-advisors), cryptocurrencies, artificial intelligence (AI)-enabled platforms, chatbots, blockchain systems, mobile applications, and crowdfunding services (Bhat, Lone, SivaKumar & Krishna, 2024). The future of work in the financial industry involves automating routine and repetitive tasks with the aid of automated and artificial intelligence systems. Consequently, an urgent need for individuals and entrepreneurs to acquire new digital financial literacy competencies.

Financial literacy is defined as an evolving capability of financial knowledge, attitude, and behaviour necessary to manage financial resources effectively and ultimately achieve financial wellbeing and financial resilience (Gumbo, 2023). Digital financial literacy is defined as knowledge, skills, confidence, and capabilities to safely use digitally delivered financial instruments and services and make informed financial decisions (Bhat, Lone, SivaKumar & Krishna, 2024). Although most digital applications are considered cheaper and financially inclusive, individuals without access to digital gadgets like smartphones and computers are generally excluded. In most rural areas, poor internet connections and inadequate infrastructure make it difficult to facilitate digital financial transactions. However, mobile payments through mobile phone operators have been widely adopted throughout the world as these require only a mobile network connection and no internet or smart gadgets. Without digital financial literacy and access, digital financial platforms are a double-edged sword to financial inclusion and financial

exclusion. This study aims to conceptualise and operationalise the concept of digital financial literacy for effective incorporation as a component of financial literacy.

## 2. Materials and Methods

Systematic reviews are conducted to critically assess the existing body of knowledge, identifying potential gaps, thereby contributing to theory development, adhering to a clearly defined, rigorous, transparent, and replicable methodology for evaluating literature. Although the phenomenon of financial literacy is widely researched, the phenomenon of digital financial literacy is fairly new, and there is no standard agreed way of measuring digital financial literacy, leading to different definitions and measuring dimensions. This study utilised a systematic literature review methodology that integrates bibliometric and content analyses. The study employed the Prisma protocol in conducting the systematic literature review and also applied established guidelines proposed by Donthu, Kumar, Mukherjee, Pandey and Lim (2021) and Tetteh, Kwateng and Mensah (2024), which have been applied in diverse systematic literature review studies.

### 2.1. Research Question

A systematic literature review study should be guided by a research question (Donthu et al., 2021). Hence, the first step in a systematic literature review is setting out the research aim and research questions that should guide the study. The following research questions guide this study:

1. What specific skills, knowledge, and competencies are included in the definition of digital financial literacy?
2. How is digital financial literacy operationalised in literature?

### 2.2. Inclusion and Exclusion Criteria

Scopus and Web of Science databases were selected as the main sources of literature, as they are among the most comprehensive databases with large collections of peer-reviewed journals (Tetteh, Kwateng & Mensah, 2024). The study also considered OECD reports on digital financial literacy, as the organisation offers international guidelines on the measurement of financial literacy and was cited by most authors. The study's search keywords were selected after an overview of the digital financial literacy literature, and synonyms of these keywords were also included in the literature search. To be specific, the study used the following search strings: ("digital financial literacy" or "digital financial skills" or "digital financial knowledge"). The search criteria were limited to papers written in English, and the timespan was

determined by the publication trend. Literature related to digital financial literacy was published from 2020-2025. Table 1 shows the Inclusion and exclusion criteria of the systematic review.

**Table 2. Inclusion and exclusion criteria of the systematic review**

<b>Eligibility Criteria</b>	<b>Inclusion</b>	<b>Exclusion</b>
Time Frame/ Years	Limit determined by publication trend	
Publication language	English	Other
Electronic Databases	Scopus, Web of Science and OECD Website	Other Sources/ Inaccessible Studies
Relevance/Setting	Related to digital financial literacy	Not related to digital financial literacy
Document Type	Journal articles, conference papers, Books, book chapters and reports.	Other
Source type	Open access and green	Other
Publication Status	Published	Unpublished

*Source: Author's compilation 2025*

### 2.3. Data Analysis

The systematic literature review included bibliometric, content, and thematic analysis, where bibliometric data metrics were analysed using Vosviewer software, content analysis was conducted in Excel, whilst thematic analysis was conducted through manual reading of full papers to identify digital financial literacy dimensions. Bibliometric analysis employs statistical methods for performance evaluation, science mapping, and network analysis, providing data on the volume, spatial distribution, relationships, and impact of literature through various techniques (Donthu et al., 2021). The co-occurrence of keywords, co-citations, and descriptive data will serve as bibliometric markers in this study. To determine the main dimensions of the digital financial literacy literature, this study triangulated content and thematic analyses.

## 3. Results

### 3.1. Descriptive Statistics

The literature of the study was collected from 2020 to 2025 and included source literature from 73 journal sources and 82 documents/articles. The literature also analysed data from one (1) document sourced from the OECD website. The paper was considered due to its comprehensiveness in measuring digital financial literacy and was cited by most of the authors. However, the paper was excluded from citation

and descriptive statistics analysis of papers retrieved from Scopus and the Web of Science website. The collaboration of authors was highly concentrated within the same country, with 250 authors contributing and 2 single-authored documents. Table 2 shows the descriptive statistics of the papers used in the systematic literature review. The selected articles have an average citation rate of 9.79, and 48 articles have at least one citation, showing a significant contribution of the articles to the body of knowledge.

**Table 2. Descriptive statistics of the papers**

<b>Main information about the data</b>	
Timespan	2020-2025
Sources (Journals)	73
Documents	82
Average citation per document	9.79
<b>Document content</b>	
Keywords Plus (ID)	358
Author's Keywords	248
Authors	
Authors	250
<b>Authors collaboration</b>	
Single-authored docs	2
Contributing countries	34

*\*OECD digital literacy paper was excluded from descriptive analysis*

*Source: Author's compilation (2025)*

### 3.2. Contribution according to Country

India, Indonesia, Malaysia, the United States of America, the United Kingdom, China, and the United Arab Emirates emerged as the highest contributors to the digital financial literature. There is a poor representation of developing nations in the literature under study, especially from the African context. Assessment of digital financial literacy is important for both developing and developed nations, hence the need for more research on digital financial literacy in developing nations. Figure 1 shows the country's contribution to the digital financial literacy literature.

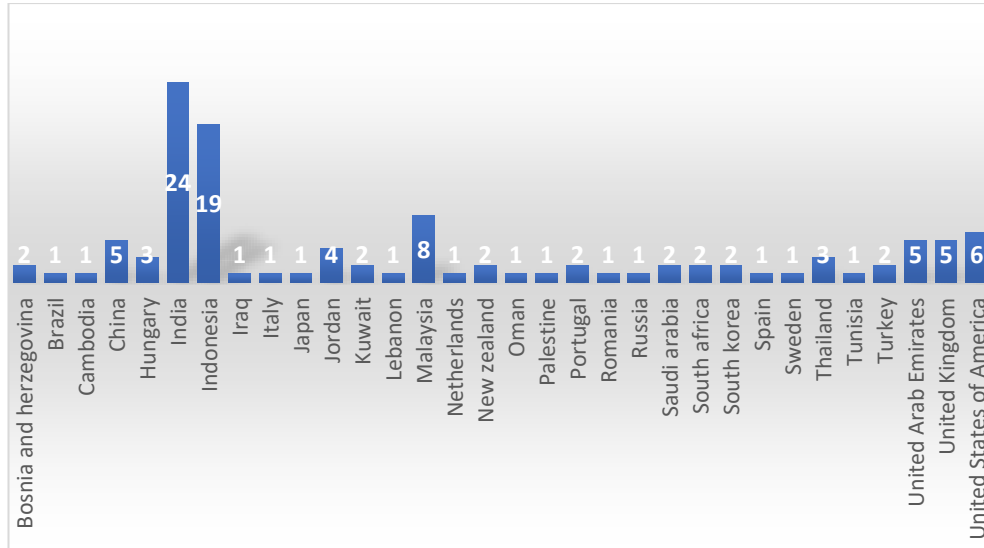


Figure 1. Country contribution (Author's compilation, 2025)

### 3.3. Keyword Co-Occurrence

Keyword co-occurrences identify main topics and trends in the literature. Only keywords that occurred at least three (2) times were considered for analysis. Out of 358 keywords, only 73 were mentioned more than two times. Digital financial literacy, digital financial inclusion, financial literacy, financial behaviour, financial knowledge, financial technology, decentralised finance, digital payments, financial education, savings behaviour, Fintech, financial well-being, and gendered differences emerged as main themes mentioned in the literature. These themes highlighted the major dimensions of digital financial literacy and its coexistence with financial literacy and financial inclusion. The development of Fintech and digital devices is also a major cause of the need for digital financial literacy.

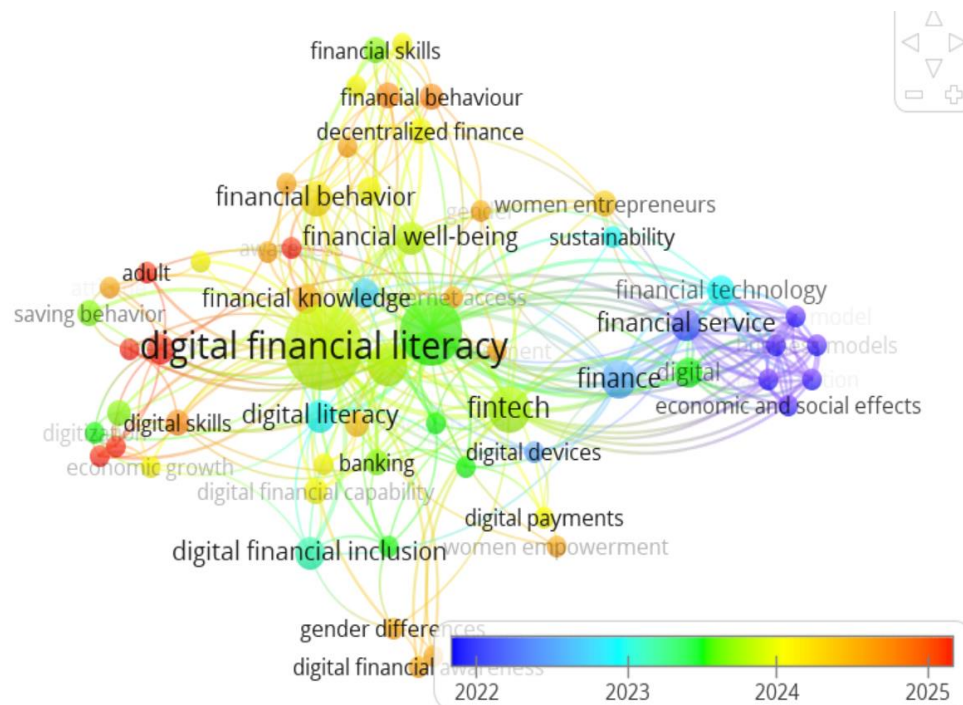


Figure 2. Keyword co-occurrence (Author's compilation, 2025)

### 3.4. Publications by Year

The publication trend on literature on digital financial literacy is on the rise, with the period 2023 to 2025 dominating in terms of publication outputs. The increase in publication outputs can be a result of increased discussion on the need for digital financial literacy as the financial landscape continues to evolve. The debate on digital financial literacy gained attention from 2020, which could be related to increased automation and digitalisation of financial services during and post the COVID-19 pandemic.

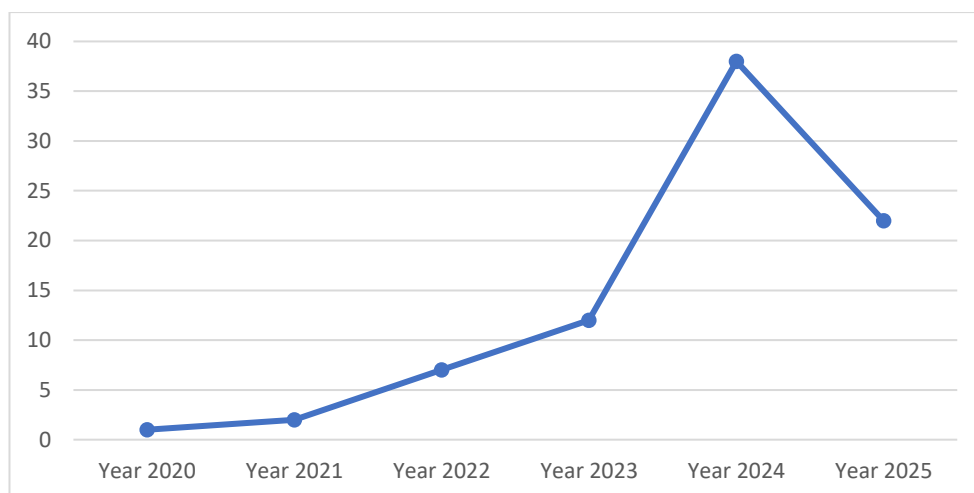


Figure 3. Publication by year (Author's compilation, 2025)

### 3.5. Conceptualisation of Digital Financial Literacy

As the financial landscape continues to evolve, the skills needed to navigate it have also changed to include digital financial skills. People are now required to have digital financial literacy. Firstly, digital financial literacy is defined as a concept that combines financial literacy, financial capability, and digital literacy (Prakash, Vazirani & Krishna, 2022). The authors argue that digital financial literacy is defined as the acquisition of knowledge, skills, confidence, and competencies to safely use digitally delivered financial products and services, to make informed financial decisions, and to act in one's best financial interest based on their economic and social circumstances. Similarly, Bhat, Lone, SivaKumar and Krishna (2024) define digital financial literacy as the knowledge, skills, and capabilities needed to understand, evaluate, and effectively use digital financial services and technology. These initial two definitions see digital financial literacy as a combination of cognitive and practical skills for using digital financial services. However, these definitions omit the importance of financial attitudes, which play a vital role in financial management. Poor financial attitudes, such as favouring current spending and money use, can be reinforced by digital financial payments, as individuals can access their money more easily through digital platforms than traditional ones.

Secondly, OECD (2024) describes digital financial literacy as a blend of knowledge, skills, attitudes, and behaviours essential for individuals to be aware of and securely use digital financial services and technologies, thereby contributing to their financial well-being. This aligns with the measurement of financial literacy, which includes financial knowledge, financial attitude, and financial behaviour. This definition

covers practical digital skills, cognitive awareness, and understanding of digital financial services and platforms, including attitudes towards money and digital platform use. Zaimovic, Omanovic, Dedovic and Zaimovic (2025) also adopted the OECD definitions and define financial literacy as a mix of digital financial knowledge, attitude, and behaviour. However, these two definitions do not explicitly include digital risk management but measure digital risk management as a component of financial behaviours to protect personal data. Digital risk management is crucial for protecting money and information online. Unlike traditional transactions, which tend to be more secure and closed, digital financial services are available internationally, accessible at all hours, and are more vulnerable to cybercrime and phishing scams. Yadav, Banerji and Garg (2025) define digital financial literacy as a spectrum of competencies, including understanding online banking, managing investments through digital platforms, evaluating the credibility of financial information online, and using financial planning tools and applications. The literature agrees that digital financial literacy involves a set of skills necessary for making informed financial decisions using digital services; nevertheless, there remain significant disagreements about what these skills entail. While some authors define financial literacy as a component of financial literacy (OECD, 2024), others view digital financial literacy as an independent extension of financial literacy. Since financial literacy is defined as an evolving competence comprising financial behaviour, knowledge, and attitudes essential for financial decision-making and well-being, digital financial literacy should be regarded as an additional, inclusive component of financial literacy, hence the need to measure and embed digital financial literacy when conducting financial literacy surveys.

### **3.6. Operationalisation of Digital Financial Literacy**

Bhat, Lone, SivaKumar and Krishna (2024) operationalised digital financial literacy into three components: digital financial knowledge, digital financial experiences, and digital financial skills. Digital financial knowledge assesses understanding of financial concepts, tools, and practices in the digital realm whilst, digital financial experiences focus on interactions, perceptions, and outcomes encountered when engaging with digital financial services or platforms; and digital financial skills refer to the knowledge, capabilities, and competencies necessary to navigate and utilise digital financial services effectively (Bhat, Lone, SivaKumar & Krishna, 2024). Additionally, Aryana, Alsharifb, Alquqab, Ebbinia, Alzbounc, Alshuridehd and Al-Hawary (2024) introduced the concept of digital financial awareness as a facet of digital financial literacy, measuring an individual's understanding, consciousness, and knowledge of the digital financial landscape, including its technology, risks, opportunities, and impacts across various aspects of life. Various authors in literature measure digital financial awareness as a component of financial knowledge;

however, importance should be emphasised on the knowledge and awareness of financial products, financial concepts and the associated risk and security measures.

The OECD, in 2022 and 2024, developed a digital financial literacy toolkit for conducting a multinational comparative analysis of digital financial skills among adults in OECD countries. The toolkit measures digital financial literacy across three main dimensions: digital financial knowledge, digital financial behaviour, and digital financial attitudes. The digital financial knowledge component is assessed through seven questions, with one point awarded for each correct answer, resulting in a total of 7 points or 43.75% (7/16). The digital financial behaviour is calculated as the number of good financial savvy behaviours practised, with one point for each behaviour, contributing a total weight of 37.5% (6/16). Additionally, the digital financial attitude is measured by counting the number of “positive” attitudes elicited by three statements, each awarded one point for a correct answer and contributes a weight of 18.75% (3/16). Therefore, the overall score sums the three dimensions: knowledge, behaviour, and attitudes, and ranges from 0 to 16. Apart from measuring digital financial literacy, the OECD (2024) toolkit also collects data on digital financial inclusion, which is vital for assessing the level of usage of financial holdings and digital products among surveyed individuals. Table 3 displays the OECD measuring scale for digital financial literacy.

**Table 3. OECD (2024) Digital financial literacy measurement**

Question focus	Dimension measured	Points	Weight
Access to the internet	Prerequisite for access to digital financial resources	0	0
Frequency of access to the internet		0	0
Frequency of use of different devices to access the internet	Digital literacy behaviour	0	0
Digital literacy use of computers, email, mobile, special networks, online services, sourcing information online, undertaking administrative tasks online, and accessing news online	Digital literacy behaviour and skills	1	0
Behaviours to protect personal data	Digital financial behaviour:	1	0
Digital financial product awareness	Digital financial services access and use	1	DFS
Digital financial product holding	Digital financial services access and use	1	DFS

Digital financial product choice	Digital financial services access and use. Digital financial services score	1	DFS
How the most recent digital financial product choice was made	Digital financial literacy – behaviour:	1	6.25%
Sources of information that influenced the product choice	Digital financial behaviour	0	0
Information about using digital financial services	Digital financial services access and use	1	DFS
Information about issues related to financial product use	Digital financial services access and use	1	DFS
Various statements that are designed to indicate attitudes and behaviours	Digital financial behaviour:	5	31.25%
Various statements about attitudes related to digital financial services	Digital financial attitude	3	18.75%
Understanding of digital contracts, personal data use and crypto assets, and other digital financial knowledge questions	Digital financial knowledge	7	43.75%

*\*DFS relates to digital financial services access and use scores, which were not weighted for digital financial literacy in the OECD (2024) toolkit.*

*Source: Author's compilation*

Although the OECD toolkit is comprehensive and contains a wider set of questions to assess digital financial literacy, not all questions contribute points to the score. Researchers have the option to add additional points to the core questions, weighted according to the toolkit. Similarly, Yadav and Garg (2025) measured digital financial literacy using five dimensions: financial behaviour with 7 points, digital financial attitude with 4 points, digital financial knowledge with 8 points, digital financial risk management with 7 points, and the practical implementation of digital finance with 4 points. While these five dimensions are measured, their questions align with the OECD (2024) digital financial literacy dimensions of digital financial knowledge, behaviour, and attitude. Zaimovic, Omanovic, Dedovic and Zaimovic (2025) adopted the OECD (2024) method of measuring digital financial literacy, where digital financial knowledge, digital financial behaviour and digital financial attitudes were measured. The authors endorsed digital financial attitudes, digital financial knowledge, and digital financial behaviours as the major dimensions to be considered when measuring digital financial literacy.

Vieira, Matheis, Lehnhart and Tavares (2024) developed a scale for measuring digital financial knowledge across four dimensions: practical know-how, knowledge of digital financial services, practical know-how of digital financial services, and

mobile money proficiency. The practical know-how dimension assesses understanding of setting up an account on digital financial services platforms, conducting transactions via digital payment applications, cancelling transactions, and navigating the digital financial services menu. The knowledge of digital financial services dimension covers awareness of digital payment methods, trading financial securities, digital lending methods such as peer-to-peer transactions, and online insurance product purchasing. The practical know-how of digital financial services dimension measures skills in opening accounts on digital payment apps, making online payments, and cancelling transactions. Whilst the mobile money proficiency dimension evaluates the ability to use a mobile digital device independently. Vieira et al. (2024)'s scale primarily measures digital financial knowledge and behaviours but does not include digital financial attitudes. The questions are also limited and do not extensively explore major digital financial risk management.

Yadav Banerji and Garg (2025) identified eight dimensions of digital financial literacy: digital financial knowledge, digital financial risk control, knowledge of consumer rights and redress procedures, practical application of digital finance, digital financial behaviour, self-protection, decision-making, and other elements, including experience, numeracy, technical skills, and access. These dimensions evaluate understanding of financial concepts, practical use of digital tools, making informed financial decisions, safeguarding personal financial information, and general experiences with digital technologies such as websites, smartphone applications, and social media platforms.

Ravikumar, Suresha, Prakash, Vazirani and Krishna (2022) measured digital financial literacy using 47 Likert scale statements representing 12 dimensions, namely digital knowledge, financial knowledge, knowledge of digital financial services, awareness of digital financial risk, digital finance risk control, awareness of customer rights, product suitability, product quality, gendered social norm, practical application of knowledge and skills, decision-making, and self-determination. Table 4 below illustrates how digital financial literacy was assessed by Ravikumar et al. (2022).

**Table 4. Ravikumar et al. (2022) digital financial literacy measurement**

Question focus	Dimension	Points	Weight
The usage of digital devices, the usage of internet banking and mobile banking, and online shopping	Digital knowledge	5	10.6%
Budgeting, savings, impulsive buying behaviours and simple and compound interest knowledge	Financial knowledge	6	12.8%

Awareness of digital payment methods, knowledge of online trading, knowledge of digital lending models and awareness of online insurance	Knowledge of digital financial services	4	8.5%
Awareness of online financial risks, protection against online risks and sharing of critical information	Awareness of digital finance risk	4	8.5%
Ability to complete the digital transaction, ability to resolve the errors, preference for digital financial services and error-free and continuous usage of digital financial services	Digital finance risk control	4	8.5%
Approaching the right forum against digital risk, awareness of the ombudsman for digital transactions	Knowledge of customer rights	2	4.3%
Suitability of digital financial services to financial needs, suitability of digital financial services and customised digital financial services to financial goals	Product suitability	3	6.4%
Cost, transparency and availability of choices	Product quality	4	8.5%
The person administering personal finance	Gendered social norm	2	4.3%
Management of daily finance, the setting of financial goals, the ability to choose the right digital financial service, usage of digital and financial knowledge and satisfaction with digital financial service transactions	Practical application of knowledge and skill	6	12.8%
The practice of a positive financial attitude and behaviour in an abnormal financial situation	Decision making	2	4.3%
Pride, positive behaviour, benefits and motivation	Self-determination to use the knowledge and skills.	5	10.6%

*Author's compilation (2025)*

The dimensions of digital knowledge and financial knowledge measured by Ravikumar et al. (2022), along with their statements, align more closely with measuring financial behaviours related to the practical use of digital financial services, saving, and budgeting. The financial knowledge dimensions gauge an individual's broad financial understanding, considered in the measurement of financial literacy, and are not specific to digital financial knowledge. Ravikumar, Suresha, Prakash, Vazirani and Krishna (2022) offered a comprehensive scale for assessing digital financial literacy with integrated financial literacy dimensions. Literature indicates that digital financial literacy should be measured alongside financial literacy (Ravikumar et al., 2022) and financial inclusion (OECD, 2024).

Literature emphasised the importance of financial literacy in promoting inclusive economic growth (Lyu, Li, Liu & Deng, 2025), reducing inequality (Al-Afeef & Alsmadi, 2025), improving financial market participation (Hu & Liu, 2025), preventing financial fraud (Isaia, Oggero & Sandretto, 2024), promoting entrepreneurial resilience (Purwoto, Rahmawati, Rahayu & Abhedananda, 2025), increase household income (Yu, Li, Li, Luo & Liu, 2025), promote financial inclusion (Tulcanaza-Prieto, Cortez-Ordoñez, Rivera & Lee, 2025), improves business profitability, improves peer-to-Peer lending adoption (Khan, Singh, Laskar & Choudhury, 2025), improve positive financial behaviour (Aryana et al., 2024), improves self-control, improves financial well-being (Croitoru, 2025) and improves life Satisfaction (Choung et al., 2024). Apart from the extant literature discussing the importance of financial literacy, there is still a gap in the literature on the measurement of digital financial literacy, as very few studies have focused on the operationalisation of digital financial literacy.

#### 4. Conclusion and Direction of Further Study

There is no consensus in the literature on the measurement and definition of digital financial literacy, with authors using different measures and dimensions to assess it. There are also contrasting views on whether digital financial literacy should be seen as an inclusive component of financial literacy or as a separate, independent skill. While some authors include financial inclusion and an individual's holding of financial products as part of the digital financial literacy score, others distinguish financial inclusion scores from digital financial literacy. Further research is needed to establish standard dimensions for measuring digital financial literacy. Although some international organisations, like the OECD, have developed toolkits for measuring digital financial literacy, the assessed dimensions remain limited to digital financial knowledge, behaviour, and attitudes. This study identifies digital financial knowledge, digital financial behaviour, digital financial attitude, risk management, and access and utilisation of digital financial services as major dimensions for measuring digital financial literacy. The study also defines digital financial literacy as a component of financial literacy and recognises financial literacy as an evolving capability. Therefore, continuous and updated research on financial literacy and digital financial literacy is essential as the financial landscape continues to change.

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