



The Effect of Digital Financial Literacy on Personal Financial Management Behaviour of Women of Punjab: Exploring The Role of Digital Financial Socialisation as A Mediating Variable

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Abstract

Digital financial literacy empowers individuals in their personal financial management decisions by improving their skill to control their finances by making use of digital services such as mobile phones, internet, social media to make digital financial decisions and protect themselves from emerging risks in buying and selling, misuse of personal information, excess borrowing, fraud and scams. The current study aims to analyse the effect of various dimensions of digital financial literacy, like digital financial awareness, digital financial usage, and digital financial self-protection, on personal financial management behaviour and to examine the effect of digital financial socialisation as a mediating variable in this relationship. The study is descriptive in nature and used women of Punjab as population for study. The data is collected from 385 working and non-working women of Punjab with the help of questionnaire. The analysis has been done with the help of multiple regression analysis by using SPSS 25. The findings revealed that various dimensions of digital financial literacy showed a positive and significant effect on personal financial management behaviour, and digital financial socialisation significantly mediates this relationship. The study creates novelty by exploring the role of digital media to financially socialize women, which helps to develop new insights for policymakers to frame financial policies as per the needs of women of Punjab to improve their digital financial literacy to contribute towards financial inclusion.

Keywords: Digital Financial Literacy; Digital Financial Awareness; Digital Financial Usage; Digital Financial Self-Protection; Digital Financial Socialisation; Personal Financial Management Behaviour; Financial Inclusion.

1. Introduction

Financial literacy refers to an individual's attitude, behaviour, and level of understanding regarding financial products and services. It also discusses an individual's proficiency with personal finances. Digital financial literacy assimilates financial literacy and digital platforms to manage personal financial choices of an individual (Lyons & Kass Hanna, 2021). The digitalization of banking services during the pandemic compelled individuals to acquire these skills to make their contributions towards a cashless society and get themselves ready to face new challenges that occur due to the digital revolution. (FII Tracker, Wave 5, 2018) The previous literature shows that the level of digital financial literacy regarding basic mobile activities like making/receiving calls is similar among males and females, but engagement of women in internet-based activities is significantly lower than men. This is one of the reasons that they are easily trapped in digital financial frauds and scams. (Demirguc-Kunt et al., 2018) argued that most of the women still do not have access to formal financial services because of a lack of digital skills, mobile phones, and financial capability. (Ozili 2020) Although there is a lack of digital financial awareness among various societal segments, the use of these digital technologies necessitates that people be fully aware of all the advantages and disadvantages of doing so to safeguard themselves against digital financial risks and to take advantage of the safe, quick, and convenient digital financial services. (Angeles 2022; Setiawan et al 2022) argued that to improve digital financial literacy, collaborative efforts from the government, financial and non-financial organisations are needed, and there is a need to initiate various educational programs and campaigns to spread awareness. The current study aims to analyse the effects of various measures of digital financial literacy on personal financial management behaviour and to examine the mediating effect of digital financial socialisation on the relationship between digital financial literacy and personal financial management behaviour of women of Punjab.

2. Review of literature

2.1. Digital financial literacy

Digital financial literacy helps people responsibility for their financial planning. (Prasad et al, 2018), Conducted a study on 268 households of Udaipur city, Rajasthan, revealed that there is a need for an awareness campaign to spread digital financial literacy and to promote various digital platforms. (Maman Setiawan et al 2020; Rahayu et al, 2022), concluded that digital financial literacy positively affects current saving, spending, and investment behaviour, which automatically affects future behaviour of millennials. (Lyons & Kass Hanna 2021), examined the relationship between multi-dimensional measures of financial and digital literacy through a survey of seven South Asian and sub-Saharan African countries, and proposed to redefine traditional financial literacy to include digital financial literacy. (Prete 2022), states that digital financial literacy should be considered along with financial literacy to assess the digitalization of individual investors. Further, (Telukdarie & Mungar, 2023; Amnas et al, 2024) highlighted the role of DFL in the effective utilisation of financial technology, which has a positive effect on financial inclusion. The following are the various dimensions to measure digital financial literacy

2.2. Digital financial awareness

Digital financial awareness opens many new opportunities for individuals to give more exposure to their businesses to increase their earnings with the help of affordable and convenient banking services. (Morgan et al 2019) DFA means the knowledge and awareness of digital services such as mobile phones, the internet, and social media to make digital financial decisions. Some basic competencies described by (OECD 2017) regarding digital financial literacy for G20 member countries are awareness of benefits and risks of various digital financial products and services, knowledge of regulated and unregulated financial products, knowledge and awareness regarding consumer rights, understanding various terms & conditions and implications of signing digital contracts, knowledge of various online frauds, hacking, data theft and cyber laws. The study measured the level of awareness regarding access, use of basic knowledge of digital technologies, and social media at 3- 3-point Likert scale- unaware, moderately aware, completely aware. (Prasad et al, 2018) examined a positive correlation between digital awareness and the use of digital platforms for financial decisions. (Setiawan et al, 2020) concluded that millennials are more aware of the risks associated with digital financial transactions, as this generation is more tech-savvy. (OECD/INFE 2023), Surveyed in 39 countries and determined a huge gap in awareness and utilisation of financial skills, as individuals are aware of digital financial transactions, but they are not making full use of these skills for financial decision making. (Wijayanti et al, 2024) emphasises on understanding of digital financial tools and apps for improving financial management behaviour.

2.3. Digital financial usage

(Shen et al, 2018; Morgan & Trinh 2019) analysed the association of financial literacy with adoption and use of digital financial services, which ultimately affect financial decisions. (Bharadwaj et al, 2019; Lyons, Kass-Hanna & Greenlee, 2021) examined the positive relationship between access and use of digital financial services, like mobile money access and adoption of digital financial behaviour, like an increase in savings and investments. (Rajdev et al, 2020) examined the association of digital financial literacy with the practical application of digital platforms. As per (Global Findex Database (2021), the individuals using digital payment gateways, mobile phones, and the internet for making or receiving payments are less than 10% in the case of India as compared to all other G-20 countries. As per (OECD, 2018), there is a huge gender gap in digital access, especially, women make less use of mobile phones and the internet as compared to men due to a lack of digital skills and confidence, and the use of e-commerce is more by men than women. Further, Klapper & Miller (2021; RBI 2022) argued that digital access and use are lower in the older population as they are more inclined to use cash payments, and the use of UPI for making and receiving payments is more preferred by young generations and middle-aged individuals. (Neves et al, 2023) revealed that people with more money options use digital technologies more frequently, not only because of convenience and usefulness but also due to security and trust. (Shehadeh et al, 2025) examined the substantial relationship of digital financial awareness, experience, and skill with digital payment adoption and concluded that more digital expertise leads to more use of cashless payment by women. (Imawan et al, 2025) argued that personal and customised digital financial tools help to improve financial behaviour.

2.4. Digital financial self-protection

DFSP is the ability to detect and avoid digital scams and frauds, as explained by (Lyons & Kas Hanna, 2021). Digital self-protection is important to study as with the increase in the number of digital financial services, the risks of online fraud and scams have also increased; therefore, there is a need for consumer financial protection. (Morgan P.J., et al, 2019) from Asian Development Bank Institute proposed four dimensions to boost up digital self-protection: A basic awareness of difference of digital products & services from traditional financial products, possible risks of using digital financial products such as overborrowing, high interest rates, data access to third party etc, knowledge of self-protection from digital financial risk such as securing passwords and other personal information and knowledge of their rights as consumers and various redressal procedures under cyber laws. According to Women's World Banking 2021), digital financial literacy is an important component for women to make effective use of digital financial services without committing mistakes and errors. (OECD draft recommendation 2022) on high-level principles on consumer financial protection, also emphasizing legal and other measures to protect the rights of consumers in their online transactions and their dealings with financial service providers, and recommending the need for a high level of digital financial literacy to avoid any unauthorised use of personal information, hacking, phishing, discriminatory treatment, etc. The study measured the opinion regarding self-protection through 5- 5-point Likert scale: strongly disagree, disagree, neither agree nor disagree, agree, and strongly agree.

2.5. Personal financial management behaviour

Personal financial management includes all financial decisions related to the management of savings, spending, investment, taxes, and retirement. Various researchers (Arianti, 2017; Daragmeh et al., 2021; Meyliana et al., 2019; Normawati et al., 2021) used different theories, like the theory of planned behaviour and the theory of reasoned action, to explain the relationship between financial literacy and personal financial management behaviour. (Andreou & Anyfantaki, 2021) argued that financial literacy and digital financial literacy come together to judge financial management behaviour. (Issac G, et al, 2022) explored the effect of digital financial literacy on the socio-

economic status of working women of Kerala and concluded that digital financial awareness helps in personal financial management by understanding the various risks associated with digital financial transactions. (Prete et al, 2022) argued that the knowledge of various digital platforms, especially payment apps, is required to take sound financial decisions. (Dewmini et al, 2023; Furinto et al, 2023) examined the positive association between digital financial literacy and financial management and investment behaviour. (Abdallah et al, 2024; Ali et al 2024) revealed that all dimensions of DFL, like digital financial awareness, experience, knowledge, and digital skills, are positively associated with financial management behaviour.

2.6. Digital financial socialization

Financial decisions are influenced by various social & economic factors, family, peer groups, which ultimately affect the financial well-being of an individual (Sohn et al, 2012). Financial Socialisation is a process through which individuals can acquire skill and knowledge of financial management from their families, friends, colleagues, social media, internet, and formal financial education, which helps them to create a strong foundation for financial decision making (Ward 1974; Hilgert et al 2003). Financial socialisation theories explained that family plays an important role in a child's financial education as it has long-term implications on financial decision making (Shim et al, 2010; Gudmunson and Danes, 2011; LeBaron, Marks, Rosa & Hill, 2020). Many consumer socialisation theories state that social class, race, and ethnicity affect socialisation through the self-learning process, which is ultimately affected through financial literacy. Digital Financial Socialisation is the process of acquiring knowledge and abilities through digital resources like social media, the internet, and online financial education. (Estelami, 2014) Nowadays, the internet and social media have also emerged as socialising agents in addition to family, peers, colleagues, despite their validity and credibility issues, as consumer reliance on social media has increased for financial decision making. (Khan and Suriseti, 2020) revealed a direct effect of financial awareness on financial well-being, which in turn positively affects digital financial socialization. (Livingstone and Helsper, 2007) Also highlighted the importance of digital resources as they offer a wider experience and opportunities for learning. (Valentina et al, 2018) emphasis on the importance of digital media as a socialisation agent for building digital societies by involving both families and communities. (Ameer and Khan 2020) conducted a study in New Zealand and the findings indicated that social media and internet has more influence on financial decisions as compared to traditional media. (Chillar & Arora, 2022; Chhabra & Gupta, 2023) explored the role of various digital and social media resources in improving financial knowledge and personal financial management behaviour of individuals. (Hishamudin et al, 2025; Issac & Seranmadevi, 2025) Also emphasized the use of digital media platforms and AI Chatbots for revolutionizing financial education.

2.7. Research gap

The literature studied above indicated that there is a lack of comprehensive studies that describe the relationship between digital financial literacy and personal financial management behaviour, as earlier studies discussed the association of financial literacy with personal financial management behaviour. As digital financial literacy is a new phenomenon which emerged due to digitalisation of financial services, therefore, now in place of financial literacy there is now a need to study the effect of digital financial literacy on financial management behaviour. Further, there is a dearth of studies in the literature that highlight the effect of various dimensions of digital financial literacy on the personal financial management behaviour of women. There are a large number of studies conducted in various countries, including different regions of India, but there is a lack of studies examining the digital financial literacy and its effect on the personal financial management behaviour of women of Punjab. Lastly, there are no previous studies explaining the role of digital financial socialisation as a mediating variable between digital financial literacy and personal financial management behaviour. The present study is an attempt to fill these gaps.

Justification for taking Women as Respondents

This study focuses exclusively on women respondents to address the significant gender disparities that exist in digital financial literacy and personal financial management behaviour. (Roy and Jain, 2018) indicates that women often have lower levels of financial literacy and less access to digital financial tools compared to men, primarily due to socio-cultural, educational, and infrastructural barriers. (Sharma & Kaur, 2019) By concentrating on women, especially in the context of Punjab, the study aims to explore how digital financial literacy and socialisation uniquely influence their financial attitudes and behaviours. (Sahi S K, 2023) Moreover, empowering women through improved financial literacy aligns with national and international goals for inclusive development and gender equity. (Miglani 2024) Women also tend to acquire financial knowledge through informal networks such as family, peers, or community groups, making the role of digital financial socialisation particularly relevant. The insights gained from this research can contribute to designing targeted financial education programs and policy interventions that specifically cater to the needs of women, ultimately promoting their financial independence and inclusion.

The following are the **Research Questions**.

RQ1: Is there any effect of various dimensions of digital financial literacy (digital financial awareness, digital financial usage, and digital financial self-protection) on the personal financial management behaviour of women?

RQ2: Is there any effect of digital financial literacy on digital financial socialisation?

RQ3: Whether digital financial socialisation have any mediating effect on the relationship between digital financial literacy and personal financial management behaviour?

2.8. Conceptual framework and hypothesis

This framework is established with the help of a literature study and examines the effect of independent variable dimensions of digital financial literacy on dependent variable personal financial management behaviour, and also determines the mediating role of digital financial socialisation in this relationship. This framework assisted in framing various hypotheses to study various relationships. The following figure shows the conceptual framework:

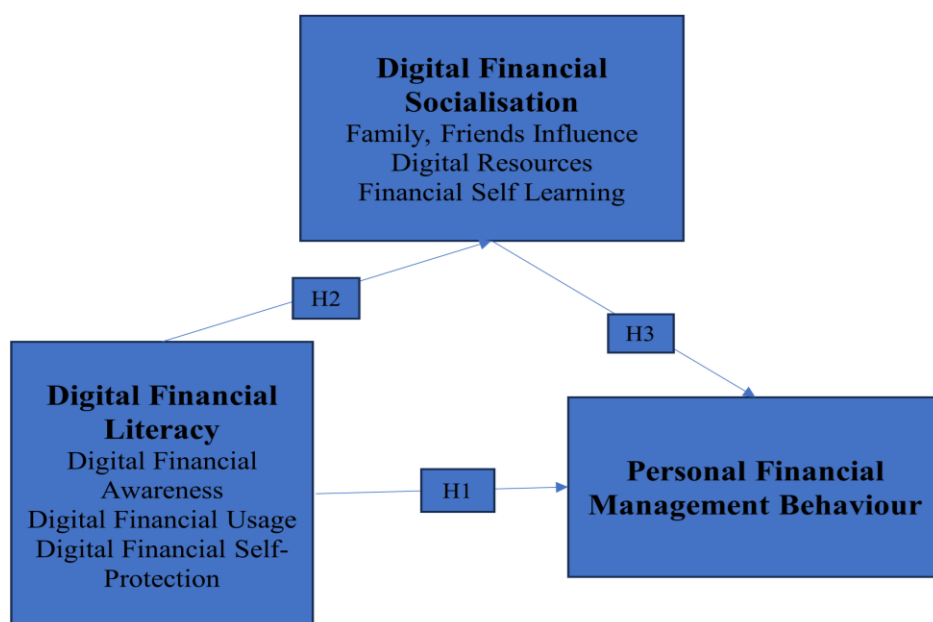


Fig. 1: Proposed Model.

Source: Author's Own.

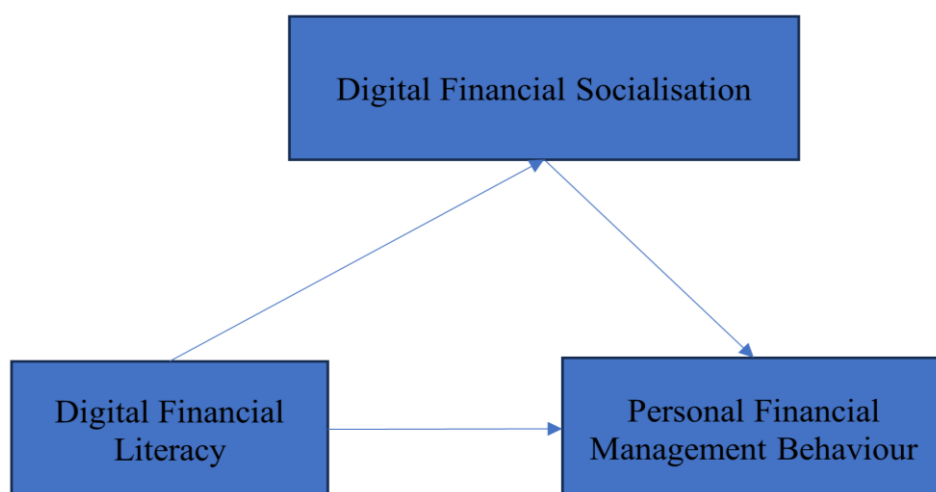


Fig. 2: Visual Presentation of Model.

Source: Author's own.

Hypothesis

H1a: There is a positive and significant effect of digital financial awareness on personal financial management behaviour.

H1b: There is a positive and significant effect of digital financial usage on personal financial management behaviour.

H1c: There is a positive and significant effect of digital financial self-protection on personal financial management behaviour.

H2: There is a positive and significant effect of digital financial literacy on digital financial socialisation.

H3: Digital Financial Socialisation mediates the relationship between digital financial literacy and personal financial management behaviour.

3. Research methodology

A quantitative research methodology and descriptive research design were used in the investigation. Data for this cross-sectional study were gathered just once. The study used only primary data collected through a purposive sampling technique. The sample size is calculated as per RAOSOFT is 385 respondents working and non-working women from 22 districts of Punjab with the help of a questionnaire. The working women are those employed in any sector, like education, banking, corporate, and non-working homemakers. The data is analysed through multiple regression analysis by using SPSS 25.

3.1. Research variables

The research variables consist of dependent, independent, and mediating variables. The dimensions of Digital Financial Literacy (digital financial awareness, digital financial usage, digital financial self-protection) are considered as independent variables proxied from (Lyons

& Kass Hanna 2021; OECD/ INFE 2022) and include 15 statements related to awareness and practical usage, and digital self-protection. Digital Financial Socialisation is a mediating variable consisting of 12 statements related to family friends influence, digital resources influence, and financial self-learning, adapted from (Shim et al, 2015; OECD/INFE, 2022). Personal Financial Management Behaviour is a dependent variable covering 14 statements related to financial management, insurance planning, investment management, tax management, and retirement management, adapted from the scale of (Lai & Tan 2009; Patel & Kumar 2017; OECD/INFE 2018).

3.2. Questionnaire design

The statistical instrument questionnaire is used to collect responses. The content validity of questionnaire is checked through various researchers, academicians and industry experts and after incorporating their suggestions the final questionnaire is prepared and validated through pilot testing and then questionnaire is distributed both online through google forms by using snowballing technique in which each respondent is asked to fill and forward the questionnaire to 3-4 working or non-working women through their professional networks and offline printed copies were also distributed to get responses from those respondents who were not familiar with google forms. All the questions were asked on a 5-point Likert scale, ranging from strongly disagree to strongly agree.

3.3. Data analysis

After the data is coded, the Excel file is moved to SPSS 25 for analysis to make intelligible inferences from the gathered data and investigate the relationship between independent and dependent variables. Due to the fact that the scale is modified from earlier research. The construct validity of the measuring tool was assessed using an exploratory factor analysis (EFA). According to Hair et al. 2010), items were deemed significant if their factor loading was 0.5 or above. Descriptive analysis, exploratory factor analysis, multiple regression analysis to examine the impact of independent variables on dependent variables, and Cronbach's alpha to assess reliability are the instruments utilized for analysis.

4. Results & discussion

The results of the analysis showed the demographic profile, the results of exploratory factor analysis, multiple regression analysis, and mediation analysis.

4.1. Demographic analysis

The following table 1 shows the demographic profile of respondents, which indicates that 34.5% females are in age group 18-25, and most of the women, 37.4% were from the age group 26-35, and 108 women belong to the age group 36-45. In educational qualification, most of the women, 46% were postgraduate and 38.7% were graduate. The large number of women, 63.4% were from the income group less than ₹ 5 lakh, and 30.6% belonged to the income group ₹ 5 lakh - ₹10 lakh. Most of the women respondents were unmarried, 52.7% and 41% were married. Further, the working women were 54.8% and 45.2% were non-working. 44.2% women were from rural areas and 55.8% from urban areas and 50.1% from joint families, and 49.9% from nuclear families.

Table 1: Demographic Profile of Respondents

Demographic Characteristics	Classes	Frequency	Percentages
Age (Years)	18 – 25	133	34.5%
	26 – 35	144	37.4%
	36 – 45	108	28.1%
Educational Qualification	Matric	4	1.0%
	Sr. Sec	41	10.6%
	Graduation	149	38.7%
	Post-Graduation	177	46.0%
	Other	14	3.6%
Level of Income	Less than ₹ 5 lakh	244	63.4%
	₹ 5 lakh - ₹10 lakh	118	30.6%
	₹ 10 lakh - ₹ 15 lakh	20	5.2%
	₹ 15 lakh - ₹ 20 lakh	3	0.8%
Marital Status	Married	158	41.0%
	Unmarried	203	52.7%
	Divorced	16	4.2%
	Separated	8	2.1%
Current Status	Working	211	54.8%
	Non-Working	174	45.2%
Area	Rural	170	44.2%
	Urban	215	55.8%
Type of Family	Nuclear	192	49.9%
	Joint Family	193	50.1%

Source: Author's own.

4.2. Results of exploratory factor analysis for DFL

To assess the construct validity of the questionnaire, exploratory factor analysis was conducted using varimax rotation and principal component analysis. According to (Hair et al. 2010), a factor loading level of 0.5 was deemed significant. All values were over 0.5, according to the communalities, which showed the variance in each dimension. Lastly, 69.927% of the variance in the whole data may be explained by the three-factor answer. Table 3 presents the outcomes of the rotated factor matrix.

We remove the items step by step. Firstly, remove those items that are not loaded on any construct, as these items have factor loadings less than 0.5. These items were DA2 (I use to check the balance and financial transactions of bank account online); and then remove some items loaded on other factors DA3 (I can operate digital bank account independently); PA5 (I prefer to take most of the services (ticket

booking, hotel booking, Zomato etc) online) and DSP1(I keep on changing my password for online payments regularly to remain protected from digital financial frauds). These items were removed from further analysis, and run EFA was run again without including these items and get our final factors.

Table 2: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.796
Bartlett's Test of Sphericity	Approx. Chi-Square	1649.485
	Df	45
	Sig.	.000

Source: SPSS 25.0.

The KMO value shows the value of sampling adequacy 0.796, which is more than 0.7, and Bartlett's test of Sphericity shows the significance of data with a p value of 0.000, which is less than 0.5 and indicates good to run factor analysis.

Table 3: Validity, Reliability, and Descriptive Results of Financial Socialisation

Factor 1: Digital Financial Awareness		Cronbach's Alpha (CA): 0.751	
Statements	Factor loading	Mean	Std. Deviation
DFA1: I know how to open a bank account online	0.607	4.2390	0.91858
DFA4: I know how to protect myself from digital scams or fraud	0.825	3.8571	0.90879
DFA5: I know the procedure and authorities for filing complaints of digital fraud	0.808	3.9766	0.99057
Factor 2: Digital Financial Usage		Cronbach's Alpha (CA): 0.816	
Statements	Factor loading	Mean	Std. Deviation
DFU1: I prefer to pay bills online	0.834	4.0104	0.83535
DFU2: I feel comfortable transferring money online	0.749	4.0987	0.81049
DFU3: I prefer to request/pay for goods & services via digital payment apps (using Mobile wallet, Google Pay, Paytm, PhonePe, bank apps, etc.)	0.843	4.0675	0.80727
DFU4: It is more convenient for me to make purchases through various online platforms like Amazon, Myntra, Flipkart, Meesho, Ajio, etc	0.703	3.9636	0.87126
Factor 3: Digital Financial Self-Protection		Cronbach's Alpha (CA): 0.851	
Statements	Factor loading	Mean	Std. Deviation
DFSP2: I accidentally provided personal financial information (Password/ Card Number) in response to an email, phone call, or message that I later found out was not genuine	0.921	3.2156	1.34155
DFSP3: I accepted advice to invest in an online financial product that was later found to be a scam	0.875	3.2364	1.33804
DFSP4: I used to take a credit/ loan online	0.765	3.1299	1.09152

Source: SPSS 25.

The above table indicates the revised result of EFA with 3 factors as required for the study, and the results of Cronbach's Alpha above 0.7 indicate the internal reliability of the construct. Factor 1 digital financial awareness showing Cronbach Alpha 0.751 along with factor loadings above 0.5, and also showing the mean and standard deviation of each statement. Similarly, Factor 2 digital practical application showed Cronbach's Alpha 0.816 and indicated the factor loadings, mean, and standard deviation of each statement. Lastly, Factor 3 digital financial self-protection has with Cronbach Alpha of 0.851 and shows factor loadings, mean, and standard deviations for each statement.

Table 4: Multiple Regression Results

Table 4. Multiple Regression Results							
Model Dependent Variable: PFMB		Un std B	Std Beta	t value	P value	F value	Hypothesis
H1	(Constant)	57.057		194.343	.000	154.340	Supported
	Digital Financial Awareness	3.060	.358	10.408	.000		
	Digital Financial Usage	3.753	.439	12.768	.000		
	Digital Financial Self-Protection	4.070	.477	13.845	.000		
R Square = 0.549 means 54.9%							
Dependent Variable: DFS							
H2	(Constant)	44.745		169.201	.000	109.053	Supported
	Digital Financial Awareness	1.965	0.279	7.420	.000		
	Digital Financial Usage	3.587	0.509	13.546	.000		
	Digital Financial Self-Protection	2.492	0.354	9.413	.000		
R Square = 0.462 means 46.2%							

Source: SPSS 25.

Table 4 above indicates the results of multiple regression. In the first part of the table dependent variable is personal financial management behaviour (PFMB), and the independent variables are digital financial awareness, digital financial usage, and digital financial self-protection. The table shows the values of the regression coefficient beta, which examines the magnitude and direction of the relationship between dependent and independent variables. The p-values are 0.000, which are less than the 0.5 level of significance, which shows the positive and significant effect of all independent variables (DFA, DFU, DFSP) on the dependent variable (PFMB). Further, the value of R Square shows 54.9% variance in the dependent variable PFMB is explained by the independent variables (DFA, DFU, and DFSP). The F value (154.340) and p value of 0.000 taken from the Anova table indicated the importance of digital financial literacy in personal financial management behaviour. Hence, the hypothesis H1a, H1b and H1c are accepted and this relationship between DFL and PFMB is supported

by (Setiawan et al, 2020; Kumar et al, 2022; Dewmini et al, 2023; Chhabra & Gupta, 2023; Abdallah et al, 2024; Dewi et al, 2024; Barus et al, 2024).

In the second part of the table, digital financial socialization (DFS) is taken as a dependent variable, and DFA, DFU, and DFSP are independent variables. The value of R Square shows that 46.2% variance in the dependent variable (DFS) is explained by the independent variable, various dimensions of DFL. Further, the beta coefficient indicated the direction of the relationship between digital financial literacy and digital financial socialization. The p-values are less than the 0.5 level of significance, indicating a favourable and substantial effect of various dimensions of DFL on DFS. The F value (109.05) and p values derived from the ANOVA table indicated the important role of digital financial literacy in digital financial socialization. Therefore, the second hypothesis (H2) is accepted and supported by (Morgan & Trinh, 2019; Hayati et al, 2021; Koskelainen et al, 2022; Chhabra & Gupta, 2023; Goyal & Kumar, 2023).

Table 5: Results of EFA for DFS

Factor 1: Family, Friends Influence		Cronbach's Alpha (CA): 0.676	
Statements	Factor loading	Mean	Std. Deviation
FFI2. I take help from my family, friends while using digital apps	0.866	3.7948	0.87320
FFI3. I take online financial decisions based on what my family/friends have done in similar situations	0.760	3.6727	0.80487
Factor 2: Digital Resources Influence		Cronbach's Alpha (CA): 0.772	
Statements	Factor loading	Mean	Std. Deviation
DRI1. Social media advertisements/ internet influenced my financial decisions	0.851	3.5506	1.09599
DRI2. I rely on the financial information given on a financial company's website	0.794	3.5325	1.01787
DRI3. I attend online financial education workshops, seminars to update my financial knowledge	0.654	3.4649	1.05546
Factor 3: Financial Self-Learning		Cronbach's Alpha (CA): 0.683	
Statements	Factor loading	Mean	Std. Deviation
FSE1. I take all online financial decisions independently	0.809	3.6675	0.99405
FSE4. I manage my daily household budget independently	0.851	3.8052	0.96067

Source: SPSS 25.0.

The above table indicated the results of revised EFA after removing firstly those items which were not loaded on any factor like FFI1 (I freely discuss about financial apps with my family, friends); DRI4 (I read magazines, newspapers, searching online financial news, watch market trend to update my financial knowledge) then remove those items which were loaded on other factor like FFI4 (I get influenced by my family, friends before taking any online financial decision); FSL2 (Digital banking apps helps to manage personal finances) and lastly, remove those item which were loaded on more than one factor like FSL3 (Online messages from banks help to keep a check on finances). The revised EFA shows the values of factor loadings, Cronbach Alpha, mean and standard deviation, which indicate the values are within acceptable limits, and Cronbach Alpha shows the values are moderately acceptable, which shows moderate internal reliability to run the model. This 3-factor solution shows the variance of 70.506, and the new factor score is constructed by adding all three factor scores, and the new factor score becomes DFSN.

Table 6: Results of Mediation Analysis

Table 6. Results of Mediation Analysis								
Model		Un std B	Std Beta	T value	P value	F value	Hypothesis Supported	
Dependent Variable: PFMB								
H3	(Constant)		57.057		210.582	.000	152.739	Supported
	Digital Financial Awareness		2.386	.279	8.418	.000		
	Digital Financial Usage		2.516	.295	8.106	.000		
	Digital Financial Self-Protection		3.205	.375	11.013	.000		
	DFSN		1.601	.325	8.205	.000		
R Square: 0.617 means 61.7%								

Source: SPSS 25.0.

The above table indicates the results of the mediation analysis. In this, PFMB is taken as the dependent variable and different dimensions of DFL (DFA, DFU, DFSP) are taken as the independent variable, and digital financial socialisation (DFSN) is considered as mediating variable. The R Square value after adding the mediating variable is 0.617, which means 61.7% variance in the dependent variable is explained by the independent variable, and there is a change in R Square value by 0.068, which shows that 6.8% more variance is explained by the model. Further, the beta coefficient value indicates the direction of the relationship between DFL and PFMB in the presence of DFSN. The p-values are less than the 0.5 significance level, indicating the significant role of the mediating variable, DFSN, in the relationship between DFL and PFMB. This is the case of partial mediation, as by adding the mediating variable, the relationship between DFL and PFMB becomes weaker but significant. The results coincide with (Valentina et al, 2018; Tiwari et al, 2020; Khawar & Sarwar, 2021; Suchocka et al, 2022; Goyal & Kumar, 2023).

Table 7: Partial Mediation

Excluded Variables								
Model	Beta	t	Sig.	Partial Correlation	Collinearity Statistics		Minimum Tolerance	
1	DFSN	.325 ^b	8.205	.000	.388	.645	1.551	.645

a) Dependent Variable: PFMB

b) Predictors in the Model: (Constant), Digital Financial Self-Protection, Digital Financial Usage, Digital Financial Awareness

The above table indicates the results of partial mediation as the beta value 0.325 shows the moderate positive relationship between DFL & PFMB in the presence of the mediator DFSN. The t value 8.205 and p values are 0.000 shows the results are statistically significant even

in the absence of a mediating variable, which depicts the case of partial mediation. The partial correlation is 0.388, which describes that 38.8% variation in the PFMB is explained by DFSN, and also collinearity statistics show that the value of VIF is within controllable limit, which means no multicollinearity issue. Hence, the moderated effect size supports the importance of DFSN as a mediator.

5. Conclusion and recommendations

The results from the above discussion indicated that digital financial literacy is an important predictor of personal financial management behaviour, like that of financial literacy, as digital financial literacy is a new concept and emerged due to the digitalisation of financial services. The results show that digital financial awareness, digital financial usage, and digital financial self-protection have a significant influence on the personal financial management behaviour of women of Punjab. Further, the analysis results indicated that digital financial literacy has a positive influence on digital financial socialisation, which also significantly mediates the relationship between various dimensions of digital financial literacy and personal financial management behaviour. The results also show that this mediation effect is partial, as by adding the mediating variable DFSN, although the effect is reduced, but positive and significant, which is not possible in the case of full mediation. These results provide important implications for policymakers to frame such policies to enhance digital financial literacy as per the needs of women of Punjab. Therefore, it is recommended for policymakers, financial authorities, and the government to arrange various online financial education programs for women, especially for non-working women who are not familiar with various digital financial apps. Further, it was also observed that women were aware of digital technologies, but they are not using them due to a lack of confidence in using digital technologies; therefore, banks and self-help groups should make such efforts to give hands-on practice on various digital financial platforms to make women in their area familiar with digital financial technologies. As working women who work in education departments, banks, corporate sector are more familiar with digital technology for one reason or the other, authorities need to give more focus on providing safe and secure digital financial programs so that they can make self-learning through digital media. The government has already initiated many digital awareness campaigns to spread awareness about digital financial literacy, digital financial frauds, how to protect ourselves from these scams, and the knowledge about authorities along with their phone numbers to whom we can contact to file a complaint, etc. The result is increased digital awareness and digital financial inclusion, but still, there is a need to make more efforts in this direction. These findings can significantly contribute towards achieving sustainable development goals SDG 4 and SDG 5) of digital inclusion, financial literacy, and gender equality.

6. Policy implications

The findings have several implications for national-level fintech and financial inclusion strategies:

- The government authorities and fintech regulators can design gender specific digital financial literacy initiatives in different languages with mobile-friendly content.
- Fintech companies come forward with behaviourally informed app design to encourage social learning through community-based financial challenges, peer information sharing, and feedback to strengthen digital financial socialisation.
- The banks need to collaborate with self-help groups, rural NGOs, and mahila mandals to extend digital financial education to underserved women with a focus on rural women who need to be trained, socialised, and empowered to use digital financial tools effectively.
- The investment is needed in rural infrastructure, especially for expanding internet facilities, mobile, and banking services under initiatives like Bharat Net.
- The findings encourage policymakers to develop region-specific and culturally sensitive fintech platforms with social support to foster the financial empowerment of women.

7. Limitations and future research

The current study has its limitations. Firstly, the study considered only three dimensions of digital financial literacy, which includes digital financial awareness, digital financial usage and digital financial self-protection, but future studies can explore other dimensions of digital financial literacy, like digital financial decision making and technological confidence, that could enhance the framework of future research. Secondly, the study is conducted only in Punjab state; in future, other states and countries can also be covered. As each state or country has a unique cultural, economic, educational, and technological landscape, this can be evaluated separately to find generalisability concerning different states or countries. Thirdly, the present research undertakes only women respondents; in future research other respondents like youngsters, millennials, students, and both genders can be undertaken. Fourthly, the mediating variable digital financial socialisation creates the novelty in this study, but in future, other mediators as well as moderators can be studied. Further, the study used a multiple regression method for analysis, which has its limitations, and other methods of analysis, like SEM, can be used to study more complex relationships. Lastly, the sample size can also be increased for future research to get more generalised research.

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