

# The Role of Digital Financial Services in Financial Inclusion Among Small-Scale Businesses

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## Abstract

**Purpose:** This study evaluates the impact of digital financial tools and services on financial inclusion for small-scale businesses, focusing on the Kozhikode district in Kerala, India. Financial inclusion is recognised as an enabler of economic growth and poverty reduction. Literature highlights that mobile banking, fintech, and digital payment platforms can transform access to finance for underserved firms. However, barriers such as low digital literacy, high transaction costs, and weak infrastructure often hinder the adoption of these innovations.

**Methodology:** Following a descriptive research design, a structured questionnaire was administered to 57 small-scale business owners across retail, agriculture, manufacturing, and service sectors. Descriptive and inferential statistics (percentage distributions, t-tests, and chi-square tests) were used to analyse the data.

**Findings:** The findings indicate that 73.7% of businesses held formal bank accounts (formal inclusion), while 26.3% remained excluded. Most (91.2%) reported using digital financial services regularly, with mobile banking apps as the most preferred platform. Common challenges included high transaction costs, poor internet connectivity, and limited digital literacy. Statistical tests found no significant differences in perceptions by gender, age, or education ( $p > 0.05$ ), suggesting similar experiences across demographic groups.

**Implications:** This study underscores the pivotal role of financial services, especially digital tools, in empowering small-scale businesses, particularly in underserved areas. Financial inclusion promotes economic stability, reduces poverty, and supports entrepreneurship by enhancing access to credit, savings, and insurance. The research highlights the need for inclusive policies and infrastructure to ensure effective adoption of digital finance, improve service delivery, and lower transaction costs. Practical insights can guide policymakers and financial institutions in fostering a supportive ecosystem that boosts small business growth and contributes to broader socioeconomic development.

**Keywords:** Digital Finance, Digital Financial Service, Financial Inclusion, Financial Service, Financial Technology, Small-Scale Business

## Introduction

Financial services are essential in promoting financial inclusion, particularly for small-scale businesses, which face significant challenges while accessing traditional financial systems (Pazarbasioglu et al.). Financial services support business expansion and mitigate financial risks by providing financial products like credit, savings, and insurance, while contributing to overall economic stability (Shofawati). Despite the essential role of financial services, many small businesses, especially in developing economies, continue to face financial exclusion due to high transaction costs, limited financial infrastructure and access to banking services (Emmanuel and Adeiza). Tackling these challenges will foster economic growth and reduce income inequality, especially in underserved regions.

The emergence of digital financial services (DFS) has enabled transformative possibilities in the financial sector, leading businesses to access financial products through cost-effective, secure, and efficient digital platforms (Kandpal and Rajat). Digital finance leverages financial technology to deliver a broad range of services, including mobile banking, digital payments, and peer-to-peer lending, thereby expanding the reach of financial services to previously underserved populations (Pazarbasioglu et al.). Despite these advancements, the uptake of digital finance remains uneven among small-scale businesses, particularly in rural and remote areas where digital infrastructure is still lacking (Sajuyigbe et al.). This disparity highlights the need for targeted interventions that address infrastructural gaps and enhance access to digital financial tools.

Moreover, financial literacy plays a significant role in determining how small-scale businesses can effectively utilise digital financial tools (Sajuyigbe et al.). Business owners find it challenging to understand and use digital finance platforms in areas with low financial literacy, restricting their access to vital financial services (Chaturvedi). Therefore, improving financial literacy and increasing awareness of digital financial tools are essential for enabling small businesses to utilise these services to foster growth and sustainability effectively.

Financial inclusion is increasingly important for fostering economic development and reducing poverty, particularly in developing economies (Raj). According to the Reserve Bank of India, financial inclusion entails providing affordable financial products and services to vulnerable groups, including low-income and marginalised populations (RBI). Small businesses, which contribute significantly to economic growth and job creation, face barriers in accessing traditional financial services due to high transaction costs, lack of collateral, and limited financial literacy (Modiba et al.). Addressing these challenges is crucial to promoting financial inclusion and enabling these businesses to thrive.

Digital financial services have revolutionised how small-scale businesses access financial products, leading to a shift from conventional banking systems (Kelikume). Technological advancements, including mobile money, digital payments, and online banking

platforms, have created more inclusive financial ecosystems (Kandpal and Rajat). In regions where physical banking infrastructure is scarce, mobile banking has emerged as a game changer, reducing costs and facilitating financial transactions even in remote areas (Raj). For instance, mobile payment systems like M-Pesa in Kenya have dramatically increased the financial participation of small businesses, lowering reliance on informal savings methods (Mbiti and David).

Furthermore, financial technology (fintech) solutions are addressing traditional barriers to finance by leveraging innovations like blockchain, cloud computing, and digital wallets (Kijkasiwat and Nongnit). These tools enable small enterprises to efficiently manage transactions, access credit, and expand their customer base, thus enhancing financial inclusion (Łasak). Studies have shown that fintech-driven financial inclusion positively impacts small-scale businesses by reducing financial exclusion, improving cash flow management, and fostering business resilience (Gibson et al.). This transformation is evident in the increased adoption of digital finance among small enterprises in sub-Saharan Africa and Southeast Asia, where fintech solutions have bridged significant financial gaps (Tah and Puspallata).

The modern world has experienced a profound transformation, particularly after COVID-19, as significant technological advancements have reshaped the financial sector through the emergence of digital finance (Mishra et al.). Digital financial services encompass financial products delivered through digital platforms, such as mobile banking, online payments, and peer-to-peer lending (Rahman and Md Mufidur). These platforms enable small-scale businesses to access financial products efficiently, manage their finances, and secure credit, thereby promoting financial inclusion (Rafiq and Abideen).

### **Statement of Problem**

Despite the positive impacts, challenges persist in implementing digital financial inclusion effectively. Small-scale businesses, particularly rural ones, often struggle with digital literacy, connectivity issues, and distrust in digital platforms (Komal and Afshan). Additionally, regulatory and infrastructural hurdles can limit the adoption of digital finance, as many

small business owners are hesitant to transition from cash-based operations to digital systems (Cheng and Jiye). Addressing these challenges requires a multi-faceted approach that includes enhancing digital literacy, building digital infrastructures, and fostering policy frameworks that support digital financial innovations (Koh et al.).

### Scope of the Study

Ultimately, this study seeks to assess the effectiveness of digital financial services on financial inclusion among small-scale businesses, focusing on how digital financial tools can address existing financial barriers and foster business growth (Nanda and Mandeep; Shofawati). It will explore the role of digital financial tools in providing access to credit, reducing transaction costs, and enhancing financial literacy among small business owners. Moreover, the study will provide policy recommendations to enhance financial inclusion, emphasising the need for robust regulatory frameworks, digital literacy programs, and infrastructural development to support the integration of small-scale businesses into the formal financial sector (Pazarbasioglu et al.; Gibson et al.). A thorough understanding of these dynamics will guide the development of more effective strategies for integrating small businesses into the formal financial system.

### Research Gap

In the Indian context, small-scale businesses play a pivotal role in economic development. However, they continue to face significant barriers in accessing essential financial services such as credit, insurance, and savings (Nanda and Mandeep). Despite the rise of digital finance, its adoption among small-scale enterprises remains uneven, particularly in regions with limited digital infrastructure and low financial literacy. While prior research has broadly explored the challenges small businesses face, there remains a lack of focused empirical studies assessing the impact of digital financial services on financial inclusion, especially within Kerala. This study addresses these gaps by examining how digital financial tools influence access to credit, reduce transaction costs, and enhance financial inclusion among small business owners in Kerala.

### Research Question

The study investigates the role of financial services in fostering business growth and economic stability among underserved entrepreneurs.

### Objectives of the Study

The primary objective of this study is to evaluate the effectiveness of digital financial tools in supporting financial needs and the impact of financial services on the financial inclusion of small-scale businesses, particularly in Kerala. The study is significant as it provides policy recommendations to strengthen digital financial ecosystems, support small businesses with tailored solutions, and foster inclusive economic growth. Ultimately, the findings are expected to inform financial institutions, policymakers, and development agencies about effective strategies for enabling equitable access to finance and promoting the long-term sustainability of small-scale enterprises.

### Review of Literature

#### Digital Financial Services (FinTech) and Financial Inclusion

Digital finance amplifies the impact of perceived benefits, and rural financial inclusion can be improved by financial education, social enterprise integration, and digital finance (Aisaiti et al.). Digital financial services like banking access, credit availability, and remittance inflows enhance financial inclusion and promote financial literacy, supporting entrepreneurial development (Ajide). This, in turn, enhances informal economic activities and alleviates poverty by providing access to banking services for underserved populations (Kelikume). Strengthening financial inclusion can lead to a more efficient and accessible electronic payment ecosystem, benefiting individuals and financial institutions (Kijkasiwat and Nongnit). Digital financial tools enhance entrepreneurs' financial inclusion, operational efficiency, and market competitiveness (Komal and Afshan). Integrating digital finance, risk management, and entrepreneurial finance can significantly enhance new venture success.

Improving financial access and upgrading infrastructure are essential for MSME development (Ibor et al.). Technology adoption positively impacts

financial inclusion and SMEs' performance, with financially literate women more likely to access financial services, enhancing decision-making, financial independence, and operational efficiency through digital tools (Tubastuvi and Wida; Mishra et al.; Shehadeh et al.). Knowledge, motivation, self-efficacy, and positive attitudes are critical for effectively applying financial knowledge (Uthaileang and Supaporn). Integrating digital finance into financial systems is crucial to achieving gender equality and fostering economic empowerment for women worldwide (Gibson et al.). Digital financial inclusion can empower women by providing access to banking, credit, and financial literacy, enabling entrepreneurship and economic participation (Modiba et al.). By embracing digital financing innovations, SMEs can enhance competitiveness, unlock new growth opportunities, and contribute to economic development in an increasingly digitalised marketplace (Balboa et al.).

### **Challenges in Financial Inclusion**

Reducing the cost of digital services and expanding product offerings strengthen SMEs and promote economic growth (Rasheed et al.). High startup costs and complex business registration processes hinder entrepreneurship (Ajide). Public initiatives such as Digital Shakti and Internet Saathi effectively promote economic participation by addressing barriers like technology access, social restrictions, and financial illiteracy (Yadav et al.). Persistent socioeconomic challenges in rural areas, like limited infrastructure, poverty, and restricted access to digital platforms (Modiba et al.). Barriers restricting women's access to finance include a lack of identification, financial illiteracy, and digital exclusion, which can be overcome by financial technology (Gibson et al.).

### **Financial Literacy and Digital Financial Services (FinTech)**

Financial literacy and FinTech adoption significantly influence business sustainability, with online operations improving accessibility and market expansion and mobile banking and e-wallets improving business transactions (Dura and Ditya). Financial literacy positively impacts digital financial

services adoption, enhancing financial autonomy, decision-making, and economic participation (Showkat et al.). Digital finance helps businesses identify opportunities, reduce financing constraints, and improve performance. Digital finance positively influences entrepreneurial performance by enhancing access to funding and reducing financial barriers (Cheng and Jiye).

Fintech and digital literacy significantly enhance financial inclusion by providing faster, more accessible, cost-effective financial services, with social media amplifying financial literacy's effect (Al-Shami et al.). Fintech platforms, including digital lending and mobile payments, help SMEs overcome financial barriers, especially during crises like COVID-19, which exacerbated funding challenges (Łasak). Financial literacy significantly enhances SMEs' performance by improving resource management and decision-making, and empowers women entrepreneurs for sustained business growth (Asandimitra et al.).

### **Methodology**

**Research Design:** A descriptive research design was employed to collect data systematically from the respondents using a questionnaire. The data is collected from small-scale business owners to analyse the role of digital financial services in financial inclusion.

**Sample Size and Sampling Technique:** Fifty-seven valid respondents were collected through convenience sampling among small-scale business owners in the retail, agriculture, manufacturing, and service sectors of the Kozhikode district. Kozhikode, once a major trading centre and gateway for spice trade, continues to play a crucial role in Kerala's economic landscape, making it an ideal setting for understanding the challenges and opportunities faced by small-scale entrepreneurs.

**Data Collection Instrument:** The questionnaire was developed based on the information collected by reviewing previous studies. A five-point Likert scale was employed to gather information regarding financial services and challenges in using these services. Demographic data, including age, gender, level of education, and type of business, were also captured.

**Data Collection Procedure:** The data was collected via face-to-face interaction with small-scale business owners across Kozhikode district. The primary data required for the study were collected from during the period between February 2025 to April 2025 (three months).

**Data Analysis:** The data analysis was conducted using SPSS software. The analyses included frequency analysis, t-test analysis and chi-square test.

## Findings

**Table 1 Demographic Profile**

Category	Sub-category	Number of Respondents (N = 57)	Percentage
Age	Below 25	15	26.3
	25 - 34	13	22.8
	35 - 44	18	31.6
	45 - 54	9	15.8
	55 and above	2	3.5
Gender	Male	29	50.9
	Female	28	49.1
	Prefer not to say	0	0
Education Level	No formal education	1	1.8
	Primary education	11	19.3
	Secondary education	10	17.5
	Above secondary education	35	61.4
	Retail	10	17.5
	Agriculture	14	24.6
	Service	17	29.8
	Manufacture	16	28.1
Years in Business	Less than 1 year	13	22.8
	1 year - 3 years	23	40.4
	4 years - 6 years	14	24.6
	Above 6 years	7	12.3

**Source:** Primary data

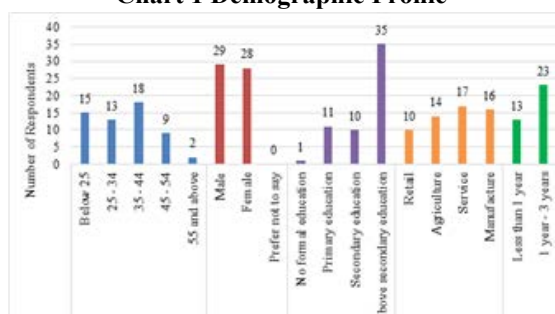
The demographic data reveals (Table 1) that most respondents are below the age of 45, highly educated, and have an almost equal gender distribution (50.9% male, 49.1% female). A majority (61.4%) has completed above secondary level of education, and 29.8% are in the service sector, followed by manufacturing (28.1%) and agriculture (17.5%), which are the types of business they engage in. Most respondents have been in business operation for 1 year to 3 years (40.4%), (24.6%) for 4 years to 6 years and (22.8%) are in business for less than 1 year. Data suggest that respondents are predominantly young, well-educated, and evenly distributed by gender,

primarily engaged in service, manufacturing, and agriculture. Most businesses are newly established, operating for 1 to 3 years. This highlights a focus on emerging, educated entrepreneurs.

Table 2 provides a snapshot of the financial tools most utilised by small-scale businesses, highlighting the role of these services in promoting financial inclusion. The most frequently used services are current accounts (27.9%) and savings accounts (25.4%), reflecting the foundational role these accounts play in facilitating day-to-day transactions and promoting financial discipline. Mobile money services also show substantial usage (18.9%),

illustrating the growing reliance on digital platforms for convenient financial transactions. Microcredit loans (15.6%) and insurance (9.0%) have moderate uptake, suggesting limited but crucial access to credit and risk protection for some enterprises. Notably, business advisory services are the least utilised (3.3%), used by only 7.0% of businesses, indicating a gap in access to non-financial support services that could enhance financial decision-making and business growth. The data indicates that small-scale businesses engage with diverse financial services, essential for improving their financial resilience, operational efficiency, and integration into the formal economy.

**Chart 1 Demographic Profile**



**Table 2 Type of Financial Service used**

Options	Responses		Percent of Cases
	Frequency	Percentage	
Savings account	31	25.4%	54.4%
Current account	34	27.9%	59.6%
Mobile money services	23	18.9%	40.4%
Microcredit loans	19	15.6%	33.3%
Insurance	11	9.0%	19.3%
Business advisory service	4	3.3%	7.0%
Total	122	100.0%	214.0%

Source: Primary data

## Analysis of Objective-1

To evaluate the effectiveness of digital financial tools in supporting financial needs.

73.7% possess a bank account in their businesses' name, representing most respondents under formal financial inclusion (Table 3). Around 26.3% of the population in the sample does not own a bank account in the name of the business. Daily engagement is very high, with 56.1% and 35.1% weekly (Table 3), indicating digital financial services as an integral part of business. A small segment, around 7%, is engaged monthly, and 1.8% rarely use digital financial services.

The financial services are predominantly provided by banks, about 45.6%, followed by cooperatives, at 35.1%. Mobile money agents serve as the primary access point for the respondents (Table 3). Microfinance is the primary source for a smaller segment, representing 7% of businesses.

Thirty-one respondents (54.4%) prefer a mobile banking app for digital financial services. 10 (17.5%) respondents prefer USSD banking, and 9 (15.8%) prefer mobile money. The least preferred platform is fintech apps, with seven respondents (12.3%). Out of 57 respondents, 21 (36.8%) prefer using digital financial services because of faster transactions, 16 respondents (28.1%) due to convenience and ease of use, and 10 respondents (17.5%) due to lower costs. Followed by 12.3% due to increased access to loans and 5.3% due to better record keeping.

**Table 3 Descriptive Statistics**

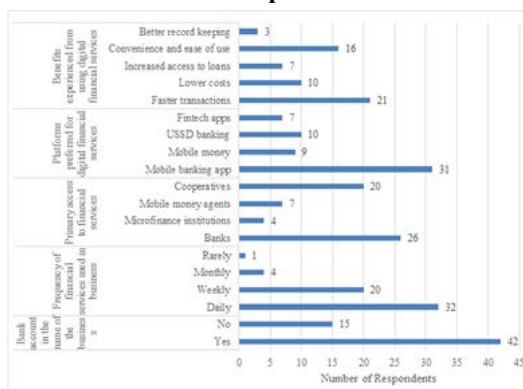
	Options	Frequency (N = 57)	%
Bank account in the name of the business	Yes	42	73.7
	No	15	26.3
Frequency of financial services used in business	Daily	32	56.1
	Weekly	20	35.1
	Monthly	4	7.0
	Rarely	1	1.8
Primary access to financial services	Banks	26	45.6



Primary access to financial services	Microfinance institutions	4	7.0
	Mobile money agents	7	12.3
	Cooperatives	20	35.1
Platforms preferred for digital financial services	Mobile banking app	31	54.4
	Mobile money	9	15.8
	USSD banking	10	17.5
	Fintech apps	7	12.3
Type of digital financial tools used in business (Multiple Options)	Mobile banking	36	31.9%
	Mobile money	28	24.8%
	Digital payment platforms	35	31.0%
	Business management apps	14	12.4%
Benefits experienced from using digital financial services	Faster transactions	21	36.8
	Lower costs	10	17.5
	Increased access to loans	7	12.3
	Convenience and ease of use	16	28.1
	Better record keeping	3	5.3

Source: Primary data

**Chart 2 Descriptive Statistics**



Out of 57 respondents, 17 respondents (29.85%) suggest financial literacy programs, 15 respondents (26.3%) for lower interest rates for small businesses, and 10 respondents (17.5%) for more mobile financial service agents. The least preferred is three respondents (5.3%) for government subsidised loans and five respondents (8.8%) for tax incentives for digital transactions.

Mobile banking is the most widely used tool, accounting for 31.9% of responses, indicating its vital role in providing accessible and convenient banking services to small businesses (Table 3). Closely following are digital payment platforms, with 31.0% of responses, highlighting their importance in facilitating smooth and efficient transactions. Mobile money services are also significantly used (24.8%), showing their relevance in day-to-day financial operations, especially in areas with limited banking infrastructure. Business management apps are the least utilised (12.4%), though their adoption still reflects growing interest in digital tools that support financial organisation and planning. Overall, the data reveals that small-scale businesses increasingly leverage diverse digital financial tools to enhance accessibility, efficiency, and financial management, which are key drivers of financial inclusion.

## Analysis of Objective-2

To evaluate the impact of financial services on the financial inclusion of small-scale businesses.

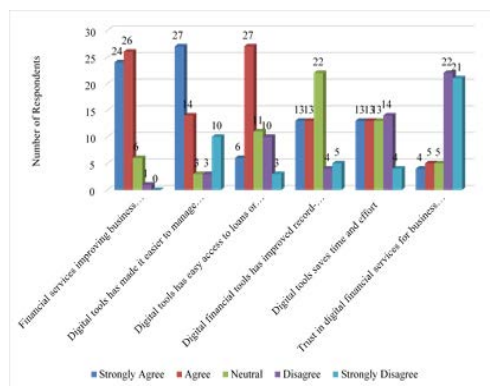
Table 4 indicates that financial services are generally perceived positively in enhancing business performance, with most respondents agreeing or strongly agreeing with their impact. Digital tools are acknowledged for simplifying financial management and improving access to loans, though some respondents remain neutral or sceptical. Record-keeping is viewed with mixed sentiment, as a notable portion holds a neutral stance, while others agree on its benefits. However, while many recognise the time-saving potential of digital tools, concerns about their effectiveness persist. Trust in digital financial services is notably low, with significant scepticism regarding their reliability and security, highlighting a critical barrier to financial inclusion for small-scale businesses.

**Table 4 Descriptive Statistics**

Opinion of respondents (N = 57)	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Financial services improving business performance	24 (42.1%)	26 (45.6%)	6 (10.5%)	1 (1.8%)	0
Digital tools have made it easier to manage business finances	27 (47.4%)	14 (24.6%)	3 (5.3%)	3 (5.3%)	10 (17.5%)
Digital tools have easy access to loans or credit through digital platforms	6 (10.5%)	27 (47.4%)	11 (19.3%)	10 (17.5%)	3 (5.3%)
Digital financial tools have improved record-keeping	13 (22.8%)	13 (22.8%)	22 (38.6%)	4 (7.0%)	5 (8.8%)
Digital tools save time and effort	13 (22.8%)	13 (22.8%)	13 (22.8%)	14 (24.6%)	4 (7%)
Trust in digital financial services for business transactions	4 (7%)	5 (8.8%)	5 (8.8%)	22 (38.6%)	21 (36.8%)

Source: Primary data

**Chart 3 Descriptive Statistics**



**Table 5 Impact of Financial Services on Business Operations**

Opinion of respondents (N = 57)	Yes	No	May be
Opinion about whether accessing financial services made it easier to save or reinvest in business	50 (87.7%)	0	7 (12.3%)
Opinion about whether you feel better informed about financial services now compared to when you started your business	51 (89.5%)	6 (10.5%)	0
Opinion regarding digital financial tools has improved access to formal financial services	44 (77.2%)	9 (15.8%)	4 (7%)

Source: Primary data

Table 5 also represents data regarding the impact of financial services on business operations. Most respondents (87.7%) agree that accessing financial services has made saving or reinvesting in their business operations easier, while 12.3% are uncertain. Additionally, 89.5% of respondents feel better informed about financial services now than when they started their business, with 10.5% disagreeing. Regarding the role of digital financial tools in improving access to formal financial services, 77.2% agree, 15.8% disagree, and 7% are uncertain. This indicates a generally positive perception of financial services supporting business operations and financial literacy.

The most common method preferred is saving and investment, with 25.2% of respondents supporting capital growth and long-term financial planning (Table 6). Following the sending and receiving of payments, 24.5% of the responses indicated that digital platforms are important for facilitating daily financial transactions. Access to credit or loans is preferred by 22.3% of respondents. Managing business transactions, 15.1%, and record keeping, 12.9%, are also important to a lesser extent. The result shows that digital financial tools are multifunctional and are crucial in enhancing business operations, financial access, and efficiency for small-scale businesses, leading to financial inclusion.

Record keeping and sales/revenue are the top aspects positively influenced, with 32.8% and 32.1% of responses, respectively (Table 6). This demonstrates how access to financial tools and



services has enabled businesses to improve financial documentation and increase income generation. Additionally, access to credit (12.7%) and inventory management (11.9%) have also seen positive impacts, helping businesses manage operations and cash flow more effectively. Business expansion is the least cited (10.4%), indicating that financial services contribute to long-term growth. The data underscores that financial services are critical in strengthening core business functions, empowering small enterprises to operate more efficiently and sustainably, and ultimately facilitating their inclusion in the broader financial ecosystem.

**Table 6 Descriptive Statistics**

Purposes for using digital financial tools	Responses (N = 57)		% of Cases
	Frequency	%	
Sending/receiving payments	34	24.5	59.6%
Accessing credit or loans	31	22.3	54.4%
Savings and investment	35	25.2	61.4%
Managing business transactions	21	15.1	36.8%
Record keeping	18	12.9	31.6%
Total	139	100.0	243.9%
<b>Business aspects that have been positively affected by financial services</b>			
Sales/revenue	43	32.1	75.4%
Record keeping	44	32.8	77.2%
Inventory management	16	11.9	28.1%
Access to credit	17	12.7	29.8%
Business expansion	14	10.4	24.6%
Total	134	100.0	235.1%
<b>Challenges while accessing financial services</b>			
High interest rates	33	28.9	57.9%
Lack of collateral	26	22.8	45.6%
Long application processes	32	28.1	56.1%
Lack of financial literacy	14	12.3	24.6%

Distance from a financial institution	9	7.9	15.8%
Total	114	100.0	200.0%
<b>Challenges while using digital financial tools</b>			
Lack of digital literacy	27	22.0	47.4%
Poor internet connectivity	40	32.5	70.2%
High transaction fees	29	23.6	50.9%
Security concern	20	16.3	35.1%
Limited access to the support service	7	5.7	12.3%
Total	123	100.0	215.8%

**Source:** Primary data

High interest rates are the most cited challenge, reported by 28.9%, making borrowing expensive and discouraging access to credit (Table 6). This is followed closely by long application processes (28.1%) and lack of collateral (22.8%), indicating structural hurdles within lending institutions that disproportionately affect small businesses with limited documentation or assets. Lack of financial literacy, although less frequently cited (12.3%), indicates a need for better awareness and education on financial products and services. Additionally, physical distance from financial institutions (7.9%) highlights geographic limitations in service outreach. These challenges collectively emphasise the urgent need to reform and simplify financial services to be more inclusive, accessible, and supportive of small-scale enterprises aiming to grow within the formal financial system.

Poor internet connectivity is the most prevalent challenge, reported by 32.5% of responses (Table 6), indicating a significant barrier to consistent and reliable digital access. High transaction fees also emerge as a significant concern, with 23.6% frequency suggesting cost-related deterrents in using digital platforms. Additionally, a lack of digital literacy (22%) highlights the need for education and awareness programs. Security concerns (16.3%) and limited access to support services (5.7%) further contribute to the reluctance to integrate digital tools into business operations fully. Finally, these

challenges point to systemic issues in infrastructure, affordability, knowledge, and support, which must be addressed to leverage the full potential of digital financial services in promoting financial inclusion among small-scale businesses.

**Hypothesis-1:** Challenges faced in accessing traditional financial services across genders.

The results in Table 7 indicate that the mean score of males (1.93) is slightly lower than that of females (2.00). However, the mean scores are close,

suggesting that both groups perceive the challenges similarly. The t-test results in Table 18 show an F value of 0.152 with a significance value of 0.698, indicating that the assumptions of equal variances are not violated. The data suggest that the difference in mean scores between males and females is not statistically significant. Thus, we fail to reject the null hypothesis and conclude that there is no difference in the challenges males and females perceive in accessing traditional financial services.

**Table 7 t-test Analysis**

	Gender	N	Mean	F	Sig.	t-statistic
Challenges faced by small-scale businesses in accessing traditional financial services	Male	29	1.93	0.152	0.698	-0.273
	Female	28	2.00			
Most used platforms	Male	29	1.72	5.810	0.019	-1.067
	Female	28	2.04			
Digital tools have made it easier to manage my business finances	Male	29	3.48	1.213	0.275	-1.570
	Female	28	4.11			
Easy access to loans or credit through digital platforms	Male	29	3.28	0.921	0.341	-0.918
	Female	28	3.14			
Digital financial tools have improved my record-keeping.	Male	29	3.45	0.118	0.733	0.062
	Female	28	3.43			
Using digital tools saves me time and effort	Male	29	3.45	0.664	0.419	0.908
	Female	28	3.43			
I trust digital financial services for business transactions	Male	29	2.34	2.495	0.120	1.546
	Female	28	1.86			

**Source:** Primary data

**Hypothesis-2:** Gender differences in accessing digital financial services platforms.

The results in Table 7 indicate that the mean score for males is 1.72 and for females is 2.04. In the independent samples test table, the F-value is 5.810, and the significance value is 0.019, indicating that the variances between male and female groups are significantly different. There is no difference in platform usage between males and females at the 0.05 level, meaning the difference in mean scores is not statistically significant.

**Hypothesis-3:** Impact of digital financial tools on business finance management, credit access, record-keeping, time savings, and trust in digital financial services, based on gender.

Regarding the perception that digital tools have made it easier to manage business finances (Table 7), the mean score of males (3.48) indicates moderate

agreement. At the same time, females had a higher mean score of 4.11, suggesting a relatively stronger deal. The t-test result shows no significant gender difference in the perception of digital tools' ease of managing business finances.

Regarding access to loans or credit through digital platforms (Table 7), males reported a mean score of 3.28 while females had a slightly lower mean of 3.14. The t-test analysis indicates no significant gender difference in perceptions regarding access to credit through digital platforms.

For the statement concerning the impact of digital financial tools on record-keeping (Table 7), males reported a mean score of 3.45, and females reported a similar mean of 3.43. The t-test indicates that there is no significant gender difference in perceptions regarding the role of digital tools in improving record-keeping.

When asked whether digital tools save time and effort, males reported a mean score of 3.45, slightly higher than the mean of 3.43 reported by females (Table 7). The t-test result indicates no statistically significant gender difference in the perception of time-saving benefits of digital tools.

Finally, the statement regarding trust in digital financial services for business transactions revealed that males had a mean score of 2.34, suggesting moderate trust (Table 7). At the same time, females reported a lower mean score of 1.86, indicating relatively lower trust. The t-test indicates no statistically significant difference in trust levels between males and females regarding digital financial services.

The t-test results indicate no statistically significant differences between male and female respondents' perceptions of digital financial tools across the five dimensions examined. The significance values for all statements are well above the 0.05 threshold, suggesting that gender does not play a substantial role in shaping perceptions of digital financial tools in business finance management, access to credit, record-keeping, time savings, or trust in financial services.

**Hypothesis-4:** Age determines the benefits experienced from using digital financial services.

The Chi-Square test (Table 8) assessed the association between age and the perceived benefits of using digital financial services. Since the p-value (0.173) is greater than the significance level of 0.05, there is no statistically significant relationship between age and the perceived benefits of digital financial services.

**Table 8 Chi-Square Test**

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	21.155a	16	0.173
N of Valid Cases	57		
a. 22 cells (88.0%) have expected count less than 5. The minimum expected count is 0.11.			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	15.373a	15	0.425

N of Valid Cases	57		
a. 21 cells (87.5%) have expected count less than 5. The minimum expected count is 0.05			

**Source:** Primary data

**Hypothesis-5:** Educational level and preferences for improved financial services.

The Chi-Square test (Table 8) was conducted to examine the association between the level of education and preferences for policies or initiatives aimed at improving access to financial services. Since the p-value (0.425) is greater than the significance level of 0.05, there is no statistically significant relationship between educational level and preferences for financial service improvement policies.

## Discussions

The findings reveal that most respondents are below 45 years, highly educated, and primarily engaged in recently established businesses within services (29.8%), manufacturing (28.1%), and agriculture (17.5%). This demographic and sectoral profile aligns with Ahmad et al., who found that younger, more educated entrepreneurs had better access to finance, emphasising the influence of age and education on financial accessibility. Similarly, 73.7% of respondents reported having formal business bank accounts, yet 26.3% remain financially excluded, echoing Sherwani et al., who identified business duration, resource capability, and ICT use as key determinants of financial inclusion among women-led informal enterprises.

Frequent financial service usage (daily: 56.1%, weekly: 35.1%) aligns with Phatak, who observed that digital payment adoption improved operational efficiency among small businesses in Pune. However, the preference for mobile banking apps (54.4%) over fintech alternatives reflects Shashila and Mohanapriya's findings that low awareness and trust impede fintech adoption. Positive perceptions of digital finance—87.7% reported improved savings and 89.5% felt better informed—parallel to Yadav and Priyanka's assertion that digital financial literacy enhances saving and investment behaviours, though gaps in literacy persist.

Barriers such as transaction costs (42.1%), physical distance (31.6%), and lack of required documentation (22.8%) align with Nguyen et al., who highlight how limited digital literacy curbs the use of digital financial tools. Despite these challenges, 32.8% reported better record-keeping and 32.1% saw increased revenue through financial services, reflecting DNBC Financial Group's (2024) emphasis on the benefits of digital transformation.

Recommendations to bridge financial access gaps include financial literacy programs (29.85%), lower interest rates (26.3%), more mobile banking agents (17.5%), and subsidised loans (5.3%), aligning with Choudhary and Himanshi's findings that targeted financial literacy training significantly improves financial outcomes for underserved groups. Finally, the lack of significant differences in perceived financial service benefits by gender, age, or education ( $p > 0.05$ ) suggests that the positive impacts of financial services are broadly experienced across diverse demographic groups.

### **Social Implications**

This study highlights the transformative role of financial services in empowering small-scale businesses, particularly in marginalised and underserved areas. Financial inclusion can significantly enhance economic stability, reduce poverty, and mitigate financial risks for small entrepreneurs by improving access to credit, savings, and insurance. The research underscores how digital financial tools can bridge the gap left by traditional banking systems, enabling greater access to essential services and promoting financial inclusion. This digital transformation supports entrepreneurship, encourages sustainable livelihoods, and fosters social equity by increasing economic participation. Moreover, the study's focus on policy-level recommendations reinforces the need for inclusive frameworks that prioritise the financial well-being of small business owners, contributing to long-term socioeconomic development and reduced income inequality.

### **Practical Implications**

The findings of this study provide actionable insights for policymakers, financial institutions, and

development organisations aiming to strengthen the financial ecosystem for small-scale businesses. By evaluating the effectiveness of digital financial tools, the study identifies practical avenues for improving access to affordable credit, lowering transaction costs, and enhancing service delivery through mobile and online platforms. Implement targeted financial literacy programs to bridge knowledge gaps and strengthen the capacity of small-scale businesses to utilise digital financial tools effectively. Develop regulatory frameworks that facilitate the integration of small businesses into the formal financial sector. These practical implications can directly support small-scale enterprises' growth and sustainability, ultimately boost local economies and contribute to inclusive economic development in Kerala and beyond.

### **Conclusion**

The findings of this study underscore the significant role that financial services play in promoting financial inclusion among small-scale businesses. The demographic analysis reveals that most respondents are young, well-educated, and evenly distributed by gender, indicating a growing pool of emerging entrepreneurs well-positioned to leverage financial services for business growth. Digital financial tools like mobile banking, USSD banking, and mobile money services are increasingly utilised by small-scale businesses, reflecting the growing importance of mobile technology in financial inclusion. Digital financial tools simplify financial management and improve access to loans. However, despite the relatively high educational levels, financial literacy remains a critical concern, with some respondents indicating challenges in understanding and utilising financial services effectively. Policy measures to reduce transaction costs, expand mobile financial service agents, and provide government-subsidised loans for small businesses could bolster financial inclusion. Lastly, efforts to improve digital infrastructure and address security concerns are vital to fostering trust in digital financial services, enabling small-scale companies to fully integrate into the formal financial ecosystem and drive inclusive economic growth.

### Limitations of the Study

- The study is conducted, focusing on the Kozhikode district.
- The study excludes insights from medium-scale businesses, self-help groups, and non-registered organisations.

### Future Scope of Study

- The studies can be extended to other behavioural finance factors, like attitude, behaviour, perception, risk, etc.
- The study can be extended to medium-scale enterprises, self-help groups, and informal sector businesses to gain a more comprehensive understanding of financial inclusion.

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