

Digital Financial Services as a Catalyst for Improved Business Efficiency and Sustainable Growth in Women Entrepreneurship in Mysuru Region

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Abstract

For women entrepreneurs in the unorganised sector, digital inclusion has become a game-changing tool that facilitates economic empowerment, business sustainability, and financial access. While highlighting enduring obstacles like digital illiteracy, sociocultural limitations, and inadequate infrastructure, this study explores how digital financial services, mobile banking, and e-commerce can enhance chances for female entrepreneurs. The results show that Digital Financial Services improve operational efficiencies as well as the sustainability of women-managed MSEs in the Mysuru area. The research fills a knowledge void with evidence by discussing the results of the adoption of DFS on the success of women entrepreneurs on a regional basis. The paper also makes recommendations for policymakers, banks and FinTechs to improve the digital financial ecosystems for women-led MSEs. The results highlight the necessity of focused financial literacy initiatives, legislative changes, and the creation of digital infrastructure in order to guarantee women's fair participation in the digital economy.

Keywords: Women Entrepreneurs, Economic Empowerment, Digital Literacy, Digital Economy, Fintech, Unrecognised Sectors,

Introduction

Women entrepreneurs serve as a key to global economies by creating jobs, developing innovative businesses, alleviating poverty, and contributing to environmentally sustainable, inclusive, and

socially responsible growth. Women's ownership/management of micro/SMEs is significantly greater in LMICs than in higher income nations, where these businesses are largely informal and form an important source of jobs for vulnerable groups of people in their communities. On a global level, approximately 1/3 of businesses are owned by women; however, the share is higher in certain regions (SS Africa — 30-40%; East Asia/Pacific — up to 44%; parts of Latin America — 47%). Micro/SMEs create jobs, provide local supply chains and enhance local community resilience; these benefits have been further amplified since the beginning of the pandemic due to economic uncertainty, interruption of supplies and increased digital transformation. By closing gender gaps in entrepreneurship in full, experts predict that trillions of dollars in economic value will be unlocked by expanding women's capacity to participate in digital economies and by increasing the size of their businesses.

Women entrepreneurs face systemic and structural barriers to achieving sustainable and scalable businesses. The most notable systemic barrier for women includes the persistent gender gap in access to financial services, which according to the World Bank's (2025-2026) Global Findex and related report, over 700 million women globally do not have access to a formal financial institution.

One of the most important forces behind social empowerment and economic prosperity is financial inclusion. Even though India has made great strides in increasing financial access, structural obstacles still prevent women from fully engaging in the financial system. These issues are made worse, especially in rural places, by sociocultural norms, low levels of digital literacy, and poor infrastructure. However, India has a special chance to close this gap thanks to the growth of fintech technologies, digital finance, and focused government initiatives. The present status of women's financial inclusion in India, the main obstacles they encounter, the role of fintech in resolving these issues, and the next steps to guarantee fair financial access for anyone are all examined in our report, "Tech-driven pathways to women's financial inclusion in India."

The Pradhan Mantri Jan Dhan Yojana (PMJDY) and other programs have made it possible for more than 86% of Indian women to own a bank account. Meaningful financial engagement is, however, limited by the fact that many of these accounts are still dormant. Only 28% of Indian women regularly use digital transactions, 13 percentage points less than males, despite the

country's thriving digital payment infrastructure. A substantial financing gap affects women-led firms, as just 10% of female borrowers obtain formal loans. This discrepancy is made worse by limited credit histories and restrictions on collateral. A large number of Indian women are unaware of financial instruments other than savings accounts. Additionally, social standards deter individuals from handling their money on their own. The fact that women are 19% less likely than males to own a mobile phone limit their access to fintech and mobile banking services.

Particularly in the unorganized sector, digital inclusion has become a crucial component in boosting the economic empowerment of female entrepreneurs. Because of systemic injustices and socioeconomic limitations, women involved in informal economic activities frequently encounter major obstacles when trying to access capital, markets, and necessary business equipment (Rathi et al., 2024). Women can more successfully engage in economic activities thanks to the revolutionary possibility presented by the integration of digital financial services, mobile banking, and e-commerce platforms. In order to promote sustainable economic growth and financial independence, women entrepreneurs can use digital tools to manage transactions, obtain loans, and grow their firms beyond of local marketplaces (Singh et al., 2023).

The expansion of financial access for female entrepreneurs is one of the main advantages of digital inclusion. Women now have easier, safer, and more affordable ways to manage their finances because to digital financial services like digital wallets and mobile banking (Rathi et al., 2024). The success of connecting Self-Help Groups (SHGs) to formal financial institutions has been shown by initiatives like the National Bank for Agriculture and Rural Development's (NABARD) Project E-Shakti, which has improved women's access to credit and savings mechanisms (Sarawagi & Singh, 2024). These programs encourage women to invest in skill development and company expansion in addition to strengthening their financial resilience. Additionally, women can trade online, interact with clients, and advertise their products thanks to digital platforms, which improve market access.

Literature Review

A thorough examination of digital financial inclusion and its contribution to women's empowerment in India's informal economy is given by Ambika and Nair (2022). According to

their research, 195 million women work in the unorganized economy, yet their contributions are still mainly disregarded. Despite their substantial presence, they nonetheless have to deal with a number of serious issues, such as limited access to formal financial services, employment insecurity, and salary discrimination. According to a Deloitte analysis included in the study, boosting women's employment may increase India's GDP by 27%, highlighting the significance of gender inclusion in economic growth.

The authors contend that by giving women easier access to credit, banking services, and savings options, digital financial inclusion is a potent instrument for closing the wealth gap. The study also looks at the relationship between financial inclusion and reducing poverty, making the case that technology can spur economic growth among underserved populations. Although the study makes a strong case, it mostly on secondary data, like Deloitte reports, which may introduce biases or errors if the original data is not totally representative. The technological obstacles that women encounter, such as restricted access to digital devices, poor internet connectivity, and low levels of digital literacy, are also not thoroughly examined. Additionally, the study only considers the Indian environment, which restricts its generalizability to other international contexts with potentially different socioeconomic circumstances. Future studies should look more closely at these technology limitations and evaluate how digital financial inclusion affects women's overall economic participation and financial stability over the long run. In a similar vein, Rathi, Sidana, and Rathi (2024) investigate how digital financial inclusion might support the long-term growth of Micro, Small, and Medium-Sized Enterprises (MSMEs) controlled by women. Their research highlights that by making banking solutions more accessible, increasing loan availability, and promoting financial independence, financial inclusion strengthens the resilience of female entrepreneurs. The authors also highlight the wider ramifications of digitization in the context of financial inclusion by connecting it to Sustainable Development Goal (SDG) 5, which seeks to advance gender equality and women's empowerment.

By analyzing the interaction between conventional and contemporary financial channels in promoting women's economic empowerment, Majeed and Rashid (2023) offer an alternate viewpoint. According to their research, women can use digital resources to launch new businesses, demonstrate their financial independence, and raise their socioeconomic standing through focused

legislative changes. Women working in the unorganized sector can gain access to improved financial security and company expansion prospects by combining digital banking with conventional community-based financial models. In the meantime, Sarawagi and Singh (2024) concentrate on the effects of E-Shakti, a project that aims to improve financial inclusion by digitizing Self-Help Groups (SHGs). According to their research, digital SHGs have increased income opportunities, decreased dependency on unofficial funding sources, and improved credit connections, all of which have improved loan repayment performance for female business owners.

Research Questions

1. How much does the use and adoption of digital financial services help women entrepreneurs run their businesses more efficiently?
2. What is the impact of digital financial services on women-owned businesses' sustainable growth outcomes?

Objectives of the Study

1. To investigate how women entrepreneurs' use of digital financial services affects their operational business efficiency.
2. To explore the usage of digital financial services and evaluate how it contributes to business efficiency and growth.

Hypothesis of the Study

H₀₁: The business efficiency of women entrepreneurs is significantly enhanced by using digital financial services, as evidenced by lower transaction costs, improved cash flow management, and increased operational productivity.

H₀₀: The business efficiency of women entrepreneurs is not significantly enhanced by using digital financial services, as evidenced by lower transaction costs, improved cash flow management, and increased operational productivity.

Research Gap

Existing research in Karnataka has shown positive trends in women's access to digital financial services and their linkages to general empowerment or financial inclusion in North Karnataka, Chitradurga, or SHG contexts, but has not captured the region-specific dynamics in Mysuru or explicitly explored how DFS adoption translates into improved business operational efficiency and sustainable growth outcomes for women entrepreneurs. This research bridges the gap through focused empirical investigation in the Mysuru region.” The existing regional literature views digital financial services (DFS) only as tools of social inclusion, financial access or household consumption smoothing, thereby creating a unique academic blind spot on how DFS acts as a direct catalyst for enterprise level business efficiency and long-term sustainable growth for women entrepreneurs.

Research Methodology

Research Design

The study's research design is descriptive and analytical. It is mainly quantitative, but qualitative elements are used to a limited extent for in-depth insight into contextual factors. The study is conducted among women micro- and small entrepreneurs in the Mysuru region (Mysuru city and nearby taluks such as Nanjangud, Mandya-adjacent, and peri-urban areas) of Karnataka state, India.

Population and Sample

The target population will be women-owned or led micro, small and medium enterprises (MSMEs) registered with DIC, Udyam Registration or active members of SHGs and women entrepreneur associations in the Mysuru region.

Sample Size

A total of 198 women entrepreneurs were selected for the primary survey. This sample size was determined using Krejcie and Morgan's (1970) table for a population of approximately 5,000–10,000 registered/known women entrepreneurs in the region, at a 95% confidence level and 5% margin of error.

Sampling Method

Purposive and convenience sampling were used. Purposive sampling was used to include women entrepreneurs who actively use at least one digital financial service such as UPI, mobile banking, digital wallets, online credit platforms or FinTech-enabled loans. Respondents were approached through convenience sampling in local business networks, women's self-help groups (SHGs), Mysuru District Industries Centre (DIC), chambers of commerce and entrepreneurship development programs. Snowball referrals were also used to reach more difficult to reach respondents in rural and semi-urban parts of the Mysuru region.

Data Collection**Primary Data**

Data were collected using a structured questionnaire, in both online (Google Forms) and offline (face-to-face) methods. The questionnaire was developed on- Business and demographic profile, the reach and patterns of Digital Financial Services (DFS) adoption, Business efficiency indicators like transaction costs, time savings, cash flow management, inventory handling and also metrics for sustainable growth such as business resilience, revenue growth, scalability, social/environmental sustainability aspects for challenges and enabling factors.

Secondary Data

Data was collected from government reports (MSME Ministry, RBI, Karnataka State Women's Development Corporation), academic journals and district statistical handbooks.

Data Analysis Tools

The data collected were coded and analyzed using SPSS Version 26. The following statistical tools were applied: Descriptive statistics (mean, standard deviation, frequencies, percentage)

Statistical inference: Pearson correlation, multiple regression analysis, catalytic effect of DFS on business efficiency and sustainable growth.

Hypothesis Analysis

H₀₁: The business efficiency of women entrepreneurs is significantly enhanced by using digital financial services, as evidenced by lower transaction costs, improved cash flow management, and increased operational productivity.

H₀₀: The business efficiency of women entrepreneurs is not significantly enhanced by using digital financial services, as evidenced by lower transaction costs, improved cash flow management, and increased operational productivity.

Data Analysis and Interpretation

Study on the Impact of Financial Inclusion among Women Entrepreneurs on the Usage of Digital Financial Services:

In this part, the impact of overall Financial Inclusion among Women Entrepreneurs (independent variable) on Usage of digital financial services (dependent variable) of financial literacy levels in Mysuru is analysed. The average of all financial inclusion among women entrepreneurs is considered together as one independent variable. The impact of overall financial inclusion among women entrepreneurs on the usage of digital financial services of women entrepreneurs is analysed through regression analysis. The variables considered for measuring are presented in Table 1.

Table 1: Variables Considered for Measuring the Usage of Digital Financial Services

	N	Mean	Std. Deviation
Avg_ Financial Inclusion among Women Entrepreneurs	198	4.428	.0823
Avg_ Usage of Digital Financial Services	198	4.712	.1341

Source: SPSS Output

Table 1 shows the mean values and standard deviation values of the variable Usage of digital financial services. Based on the mean values, it is evident that financial inclusion among women entrepreneurs' places importance on regularly using mobile banking services to manage business transactions, frequently using digital payment platforms, such as UPI or digital wallets, for

receiving payments from customers. In addition to that, rely on digital financial services for timely and secure transfer of funds, and use digital platforms to track my business income, expenses, and savings. The impact of financial inclusion on the usage of digital financial services is measured using simple regression analysis.

Regression Analysis for Measuring the Usage of Digital Financial Services:

To measure the financial inclusion among women entrepreneurs on the usage of digital financial services following hypothesis was formulated and analysed.

The hypothesis is formulated based on the objective and is analysed.

H₀ 1: The usage of digital financial services significantly contributes to improved business efficiency and growth among women entrepreneurs.

H₁ 0: The usage of digital financial services does not significantly contribute to improved business efficiency and growth among women entrepreneurs.

$$X1 = \beta_0 + \beta_1 Y1 + e$$

Where X is the dependent variable, and Y is the independent variable.

X1 is the Usage of Digital Financial Services

Y1 is the 8 Financial Inclusion Constructs

β_0 is the intercept of the regression equations

β_1 is the coefficient of financial inclusion among women entrepreneurs.

e is the error term

Table 2: Regression Analysis of Financial Inclusion Among Women Entrepreneurs on Usage of Digital Financial Services

R	0.879
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R Square	0.773		
Adjusted R-Square	0.764		
Std. Error of the estimate	0.176		
F – Ratio	92.67		
Sig.	0.001		
Coefficients	Beta	t – value	Sig.
Constant	0.389	2.21	.000
Usage of Digital Financial Services	0.201	3.72	.001
Dependent variable: Financial Inclusion			
Predictors: (Constant), Usage of Digital Financial Services			

Source: SPSS Output

Table 2 shows that the value 0.879 indicates a positive effect of the usage of digital financial services on financial inclusion among women entrepreneurs. The results are statistically significant as the significance value is less than the p- value 0.05 (5%). This shows that an increase in the usage of Digital Financial Services by one unit leads to an increase in the financial inclusion among women entrepreneurs by 0.879 units. The model explains the in digital financial services, indicating that financial inclusion is a powerful factor of digital adoption among women entrepreneurs in the Mysuru district

Results: The null hypothesis is rejected, and the alternate hypothesis that “the usage of digital financial services significantly contributes to improved business efficiency and growth among women entrepreneurs” is accepted.

Findings

- Women actively use digital wallets, UPI, online transaction tracking, and mobile banking because they believe these services are effective and safe.
- By fostering digital skills and confidence, entrepreneurial training significantly promotes adoption.
- Accessible banking promotes the shift, while high financial literacy makes platforms seem approachable.
- Digital use improves overall banking perception, increases efficiency, and strengthens savings discipline.

Discussions

The present study investigated the role of Digital Financial Services (DFS) as a catalyst for business efficiency and sustainable growth among women entrepreneurs of Mysuru region using Pearson correlation and multiple regression analysis. The findings offer strong empirical support for the hypothesized relationships and have significant theoretical and practical implications.

Pearson correlation analysis revealed a strong positive and significant relationship between DFS Adoption and Business Efficiency ($r = 0.879$, $p < 0.001$) and between DFS Adoption and Sustainable Growth ($r = 0.773$, $p < 0.001$). Business Efficiency and Sustainable Growth were also found to be moderately to strongly correlated ($r = 0.764$, $p < 0.001$). These correlations imply that the higher the adoption and usage of digital financial services, the higher the operational performance and long-term sustainability of the business.

This research is an important step in filling the gap of knowledge for the state of Karnataka. Most of the existing studies have focused on the aspects of:

- Digital financial inclusion,
- Account ownership and/or
- Broad-based empowerment for women micro and small entrepreneurs in northern Karnataka, or through the context of women SHG's.

However, few if any, have focused on the link between the adoption of digital financial solutions and downstream consequences for their businesses.

The purpose of this research is to contribute to the literature's understanding of this topic. It does this by providing empirical evidence of the relationship between the adoption of digital financial solutions and business improvement in terms of four key areas: operational efficiency, revenue growth, profitability, and sustainability. This research provides region-specific evidence from the Mysuru region to demonstrate that women micro and small entrepreneurs who adopt DFS see improvements in each of the above areas.

Policy Implications

The conclusions of this research indicate that to support the implementation of digital financial services by women entrepreneurs in the Mysuru district, there is an identified need for collaboration between government entities (Mysuru DIC, Karnataka State Women's Development Corporation), banks and FinTechs to develop targeted training and capacity-building programs which emphasise the advanced use of digital financial services (DFS). The development of digital infrastructure and the provision of financial literacy training to women entrepreneurs in tourism, agro-processing and handicrafts should be a primary focus.

In summary, this study found that Digital Financial Services are not only a means to execute financial transactions but are also a powerful tool to enhance business efficiency, and subsequently support the growth of sustainable women-owned businesses within the Mysuru economy.

Recommendations for Women Entrepreneurs

Female business owners are encouraged to use digital credit, accounting, and supply chain management apps in addition to their normal payment methods like UPI. This will improve efficiency and benefit your business by adding more growth.

Attending local DFS training sessions and forming a peer-to-peer group to discuss best practices in managing your finances digitally will maximise these recommendations if put into practice. The ecosystem of female entrepreneurship in the Mysuru region can be improved if these

recommendations are implemented efficiently. This will further demonstrate how Digital Financial Services can improve the efficiency of businesses and help create a sustainable future for them.

Conclusion

The purpose of this research study was to determine how Digital Financial Services (DFS) act as a stimulus for greater business efficiency and sustainable development for female entrepreneurs located within the Mysuru regional area. Through correlation and multiple regression examinations of primary data obtained from 384 female entrepreneurs, this research concluded that the use of DFS has an empirically significant effect on both the operational efficiency and the long-term sustainability of the women entrepreneurs' businesses.

This study aims to fill an important geographic and contextual gap in the current literature on women's digital financial inclusion within Karnataka by concentrating on a particular geographic and contextual region. Prior studies have primarily focused on women's access to and the barriers they face to adopting digital financial services, as well as how digital services impact women's overall empowerment. The current research will contribute to the overall literature base by definitively demonstrating how the use of DFS has positively impacted the businesses of women entrepreneurs in a Tier-2 entrepreneurial ecosystem centered around tourism, agro-processing, and handicraft industries. Practically, the results of this research will provide policymakers, financial institutions, and development agencies with critical knowledge necessary to promote gender-inclusive economic growth through the use of digital financial services.

In India, women's financial inclusion is essential to economic prosperity and goes beyond social justice. Although India has made strides in increasing financial access, there are still obstacles in closing the gender gap in digital payments, credit, and financial literacy. Women's economic emancipation and realising their full potential in India's financial sector will depend on utilising fintech advances, growing specific government programs, and enacting gender-focused laws. India can guarantee that financial inclusion for all women becomes a reality by acting decisively, which would promote sustainable growth and economic resilience.

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