

# Socio-Economic Empowerment of Women through AI-Enabled Microfinance Services: Evidence from Mysore District

Ganesh Rajapure<sup>1</sup>, Anitha K R<sup>2</sup>, Dr. Licy K G<sup>3</sup>

<sup>1,2</sup>Research Scholar, De Paul Research Centre, Belagola P.O., Srirangapatna Taluk, Mandya, Dist. Mysuru, Karnataka, 571606

<sup>3</sup>Research Guide, De Paul Research Centre, Belagola P.O., Srirangapatna Taluk, Mandya, Dist. Mysuru, Karnataka, 571606

## Abstract

The present study examines the socio-economic empowerment of women through AI-enabled microfinance services in Mysore district. Recent studies on microfinance and women empowerment indicate that digital financial technologies and Artificial Intelligence (AI) have significantly improved financial inclusion, credit accessibility, entrepreneurial development, and decision-making capacity among women. AI-based microfinance systems assist in credit assessment, personalized financial guidance, digital payments, and efficient loan disbursement, thereby reducing dependence on informal lending sources. Previous research on Self-Help Groups (SHGs) and microfinance in Karnataka and other parts of India highlights that women beneficiaries experienced increased income, savings habits, self-employment opportunities, and greater participation in household and community decisions.

This study adopts a descriptive research approach using both primary and secondary data sources to evaluate the impact of AI-enabled microfinance services on women in Mysore district. The findings suggest that AI-driven financial services positively contribute to economic independence, social empowerment, and digital financial literacy. However, challenges such as digital illiteracy, poor internet connectivity, and limited technological awareness continue to affect effective implementation in areas. The study concludes that AI-enabled microfinance can serve as an important instrument for sustainable women empowerment and inclusive economic development.

**Keywords:** AI, Microfinance, Women Empowerment, Digital Finance.

## 1.1 Introduction

Women constitute a significant part of the workforce in India and play an essential role in agricultural activities, household management, and economic development. However, despite their contributions, women often face socio-economic challenges such as limited access to financial resources, low-income levels, lack of employment opportunities, inadequate education, and financial exclusion. In recent decades, microfinance institutions and Self-Help Groups (SHGs) have emerged as important instruments for promoting women empowerment by providing small-scale credit, savings facilities, and entrepreneurial opportunities to economically weaker sections of society. Previous research studies conducted in India, particularly in Karnataka, indicate that participation in microfinance programs has positively influenced

women's income generation, savings behavior, decision-making power, social participation, and self-confidence. With the rapid advancement of digital technologies, Artificial Intelligence (AI) has increasingly been integrated into microfinance services to improve operational efficiency, customer outreach, and financial accessibility. AI-enabled microfinance services such as digital lending platforms, automated credit scoring systems, mobile banking applications, chat-based financial assistance, and AI-driven financial advisory tools have significantly enhanced the delivery of financial services in areas. Earlier studies suggest that these technologies help women gain faster access to loans, improve digital financial literacy, reduce dependency on informal money lenders, and encourage entrepreneurial activities. Mysore district, known for its economy and active SHG movement, provides an important setting to examine the impact of AI-enabled microfinance services on women empowerment. Although several studies have examined microfinance and women empowerment separately, limited research has focused on the combined role of AI and microfinance in women's socio-economic development. Therefore, the present study attempts to analyze how AI-enabled microfinance services contribute to the socio-economic empowerment of women in Mysore district.

### 1.2 Background of the Study

women in India continue to face socio-economic challenges such as poverty, limited financial access, unemployment, and low participation in economic decision-making. Previous research studies on microfinance and Self-Help Groups (SHGs) have shown that access to small-scale credit and savings facilities significantly improves women's income, entrepreneurship, and social status. With the emergence of Artificial Intelligence (AI), microfinance institutions are increasingly adopting digital lending systems, AI-based credit assessment, and mobile banking services to enhance financial inclusion. Earlier studies indicate that AI-enabled microfinance services promote faster loan accessibility, digital financial literacy, and economic independence among women in Mysore district.

### 1.3 Significance of the Study

1. **Promotes Women Empowerment:** The study highlights how AI-enabled microfinance services contribute to the socio-economic empowerment of women by improving income generation, savings habits, self-confidence, and participation in household decision-making.
2. **Enhances Financial Inclusion:** Previous research indicates that AI-based financial technologies improve access to banking, digital payments, and credit facilities for women who are traditionally excluded from formal financial systems.
3. **Supports Entrepreneurship:** The study emphasizes the role of AI-driven microfinance in encouraging women entrepreneurship through timely credit availability, financial guidance, and digital financial support systems.
4. **Improves Digital Financial Literacy:** AI-enabled services such as mobile banking, digital lending platforms, and automated financial assistance help women develop technological awareness and digital financial literacy.
5. **Provides Policy Insights:** The findings of the study may assist policymakers, microfinance institutions, and government agencies in designing effective AI-based financial inclusion programs for sustainable development in Mysore district.
6. **Contributes to Academic Research:** The study adds to the existing literature on microfinance, Artificial Intelligence, and women empowerment by examining the combined impact of AI-enabled

financial services on women's socio-economic development.

#### 1.4 Objectives of the Study

1. To examine the role of AI-enabled microfinance services in improving the socio-economic status of women in Mysore district.
2. To analyze the impact of AI-based financial services on women's income generation, savings behavior, and employment opportunities in areas.
3. To study the effectiveness of Artificial Intelligence technologies such as digital lending platforms, mobile banking, and automated credit assessment in promoting financial inclusion among women.
4. To evaluate the influence of AI-enabled microfinance services on women entrepreneurship, self-employment, and decision-making capacity.
5. To identify the challenges faced by women in accessing and utilizing AI-driven microfinance services, including digital illiteracy and technological barriers.
6. To suggest suitable measures and policy recommendations for improving AI-enabled microfinance services for sustainable women empowerment and development.

#### 1.5 Review of Literature

1. **Mihir Dash, Venkat Mahendra Prasad and C. J. Koshy (2016)**, the results of the study showed that microfinance programs have created a positive impact on its beneficiaries. Majority of the respondents are engaged in various income generating activities because of the credit facilities provided by microfinance institutions. This resulted in a significant change in their income level and savings after participating in microfinance programs. This has helped them to earn income for their family and also enabled them to play an important role in their family and in society as well.
2. **Elizabeth Wanjiku, A. Njiru, (2016)**, the study sought to find out the effect of microfinance services on women empowerment in Olkalou Constituency, Kenya. A descriptive research design was used for this study. The target population comprised of women who had been using microfinance services in the constituency.
3. **Partha Mukhopadhyay, Madhabendra Sinha, Anjan Ray Chaudhury, and Partha Pratim Sengupta, (2018)**, this report puts forward the state of SHGs in the villages of Burdwan district of West Bengal, India and the effect of these SHGs on economic condition. Empowerment is a process by which the people have the right and freedom to take the decision and make choices. With respect to women, empowerment involves empowerment involves building an equitable power relation between both sexes.
4. **Taiwo, Patricia A., (2019)**, this paper examines the influence of microfinance credits on women's socio-economic status in Edo state in both microfinance that offer health-related services and those that do not. The Objectives include examining the process through which women access microfinance loans and the role of microfinance on women's socio-economic status. Social action and functionalist formed the theoretical frameworks
5. **Bandana Kumari Jain (2020)**, this paper examines the women were using microfinance services on their own and at least from the last three years. Results indicate that the use of microfinance services (credit and saving) helps women to empower. Easy access to financial services and satisfaction with the loan payment period causes no difference in the improvement of women's empowerment. Saving

service is significantly associated with women's household decision-making, major decision-making in the domestic context, and availability of basic household needs.

6. **Ms. Aarti Dhanrajani, Prof. Sanjiv Mittal, (2021)**, the study was conducted through a questionnaire involving 500 respondents from SHGs of Delhi and Haryana. It was found that there is significant relation between the microfinance program participation duration and the socio-cultural and familial empowerment. The study found evidence that microfinance program along with providing financial assistance to the women participants aid in empowering the women in socio-cultural and familial domain.
7. **Prity Purushottam Patilkale, Shabana Haque, and Sathya T., (2023)**, this paper examines the SHG is also a viable organized set up to disburse micro credit to the rural women and encouraging them to enter into entrepreneurial activities. The Government launched Swarna Jayanthi Shahri Rojgar Yojana (SJSRY) on 1<sup>st</sup> December 1997. Self Help Groups have been funded under this SJSRY scheme for women empowerment in urban areas. All the SHGs (Under SJSRY) are women groups for the study.
8. **Subas Gautam (2024)**, this thesis the economic standing, decision-making ability, knowledge, and self-worth of women, as well as community activities and self-help group programs, are all significantly impacted by microfinance. Decision-making in the family, social and political involvement, how society views them, social awareness, health and sanitation awareness, and improved livelihood were all factors in social empowerment.
9. **Elinart Chirwa, Fatima (2025)**, this research paper draws special attention to the field of financial management to critically assess the impact of microfinance services on the socio-economic empowerment of women, using the case of Vision Fund Malawi. The research examines the types of microfinance services utilized by women, evaluates their impact on income levels and business growth, and investigates changes in decision-making power and social participation.
10. **James Kizza, Nakku Maria Elizabeth Mirembe, Mubiru Pontious, and Kato Fredrick, (2026)**, this study investigates the effectiveness of microfinance services, specifically microcredit and microsavings, in promoting women's economic empowerment (WEE) in Central Uganda. Using a cross-sectional survey of women clients of microfinance institutions, the study employs correlation and hierarchical regression analyses to assess the contribution of microfinance services to WEE.

## 1.6 Research Methodology

The study adopts a descriptive and analytical research design to examine the socio-economic empowerment of women through AI-enabled microfinance services in Mysore district. Both primary and secondary data sources are utilized for the study. Primary data are collected from women beneficiaries associated with Self-Help Groups (SHGs) and microfinance institutions through structured questionnaires and interviews. Secondary data are gathered from journals, government reports, research articles, institutional publications, and previous studies related to microfinance, Artificial Intelligence, and women empowerment. Statistical tools such as percentage analysis, correlation, and simple regression are used to interpret the collected data.

## 1.7 Hypotheses of the Study

H<sub>0</sub>: AI-enabled microfinance services do not significantly improve digital financial literacy and financial inclusion among women.

H<sub>1</sub>: AI-enabled microfinance services significantly improve digital financial literacy and financial inclusion among women.

## 1.8 Data Collection

### Primary Data Collection:

Primary data for the study are collected directly from women beneficiaries in Mysore district who are associated with Self-Help Groups (SHGs), microfinance institutions, and AI-enabled financial service platforms. A structured questionnaire and personal interview method are used to gather information regarding income levels, savings habits, access to credit, digital financial literacy, entrepreneurial activities, and the utilization of AI-based microfinance services such as mobile banking, digital lending, and automated financial assistance. The respondents are selected from different areas of Mysore district using a convenient and purposive sampling method to ensure effective representation of women beneficiaries.

### Secondary Data Collection

Secondary data are collected from various published and unpublished sources related to microfinance, Artificial Intelligence, development, and women empowerment. The sources include research journals, books, government reports, Reserve Bank of India (RBI) publications, NABARD reports, SHG records, institutional publications, conference papers, websites, and previous empirical studies. Earlier research findings on digital financial inclusion, AI-enabled banking services, and women empowerment are also reviewed to support the theoretical and analytical framework of the study.

## 1.9 Sampling Method

The study adopts a purposive and convenient sampling method to select respondents from various areas of Mysore district. Women who are members of Self-Help Groups (SHGs), beneficiaries of microfinance institutions, and users of AI-enabled financial services such as mobile banking and digital lending platforms are considered for the sample. The purposive sampling technique helps in identifying respondents who possess adequate knowledge and experience regarding AI-based microfinance services. Convenient sampling is used to ensure easy accessibility and effective data collection from participants. This sampling approach enables the researcher to gather reliable and relevant information related to women empowerment and financial inclusion.

## 1.10 Sample Size

The sample size for the present study consists of 150 women respondents selected from different villages of Mysore district. The participants include members of Self-Help Groups (SHGs), beneficiaries of microfinance institutions, and users of AI-enabled financial services such as digital lending platforms, mobile banking, and online financial assistance systems. The sample size has been determined based on previous research studies related to microfinance and women empowerment, which suggest that an adequate number of respondents is essential for obtaining reliable and representative data. The selected 150 participants provide sufficient information to analyze the impact of AI-enabled microfinance services on income generation, savings behavior, financial inclusion, entrepreneurship, and socio-economic empowerment among women.

## 1.11 DATA ANALYSIS AND INTERPRETATION

### 1.11.1 PERCENTAGE ANALYSIS TABLE

Sl. No	Variable	Category	Frequency	Percentage
1	Age	18–25 years	32	21.3%
		26–35 years	48	32.0%
		36–45 years	42	28.0%
		Above 45 years	28	18.7%
2	Education	SSLC	38	25.3%
		PUC	42	28.0%
		Graduate	51	34.0%
		Postgraduate	19	12.7%
3	Occupation	Homemaker	41	27.3%
		Self-employed	62	41.3%
		Agriculture	27	18.0%
		Salaried	20	13.4%
4	Monthly Income	Below ₹10,000	36	24.0%
		₹10,001–20,000	58	38.7%
		₹20,001–30,000	34	22.7%
		Above ₹30,000	22	14.6%
5	AI-enabled Microfinance Usage	Less than 1 year	29	19.3%
		1–3 years	68	45.4%
		3–5 years	37	24.6%
		Above 5 years	16	10.7%
6	Financial Inclusion	Strongly Disagree	20	3.3%
		Disagree	39	6.5%
		Neutral	72	12.0%
		Agree	286	47.7%
		Strongly Agree	183	30.5%
7	Income Generation	Strongly Disagree	26	4.3%
		Disagree	43	7.2%
		Neutral	84	14.0%
		Agree	287	47.8%
		Strongly Agree	160	26.7%
8	Entrepreneurial Development	Strongly Disagree	24	4.0%
		Disagree	41	6.8%
		Neutral	85	14.2%
		Agree	286	47.7%
		Strongly Agree	164	27.3%
9	Social Empowerment	Strongly Disagree	23	3.8%
		Disagree	37	6.2%
		Neutral	79	13.2%
		Agree	289	48.2%

		Strongly Agree	172	28.6%
<b>10</b>	<b>Digital Financial Literacy</b>	Strongly Disagree	24	4.0%
		Disagree	41	6.8%
		Neutral	79	13.2%
		Agree	286	47.7%
		Strongly Agree	170	28.3%

**Interpretation:** The table indicates that the majority of respondents belong to the age group of 26–35 years and are predominantly graduates and self-employed women. Most respondents agreed that AI-enabled microfinance services improved financial inclusion, income generation, entrepreneurial development, social empowerment, and digital financial literacy. The findings reveal that AI-based financial services have positively contributed to the socio-economic empowerment of women.

### 1.11.2 Contingency Table

Education Level	2	3	4	5	Total
Primary	4	6	7	5	22
Secondary	5	11	14	9	39
PUC	6	10	13	12	41
Graduate	3	8	12	10	33
Post Graduate	2	4	5	4	15
<b>Total</b>	<b>20</b>	<b>39</b>	<b>51</b>	<b>40</b>	<b>150</b>

### 1.11.3 Chi-Square Test

Chi-Square Test Statistics	Value
Chi-Square Value ( $\chi^2$ )	2.487
Degrees of Freedom (df)	12
P-Value	0.996

**Interpretation:**

The Chi-Square test result indicates that there is no significant relationship between Education Level and Digital Financial Literacy among women participants. Since the p-value (0.996) is greater than 0.05, the null hypothesis ( $H_0$ ) is accepted and the alternative hypothesis ( $H_1$ ) is rejected. This means that educational qualification does not show a statistically significant association with digital financial literacy among the respondents in this study.

### 1.11.4 ANOVA Table

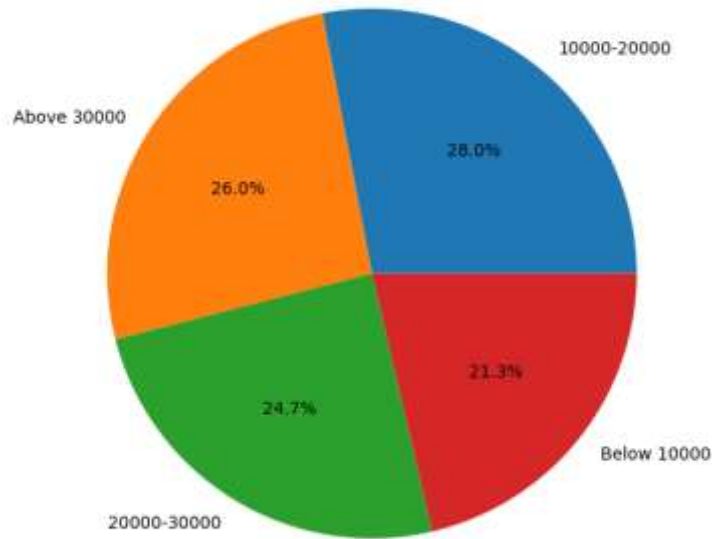
Source	Sum of Squares	df	Mean Square	F Value	Sig.
Regression	32.418	3	10.806	61.842	0.000
Residual	26.102	146	0.179		
Total	58.520	149			

**Interpretation:**

The ANOVA results indicate that the regression model is statistically significant ( $F = 61.842, p < 0.05$ ). This shows that AI-enabled microfinance variables collectively have a significant impact on socio-

economic empowerment among women participants. The model effectively explains variations in empowerment levels, confirming the importance of AI-based financial services in improving women’s socio-economic conditions.

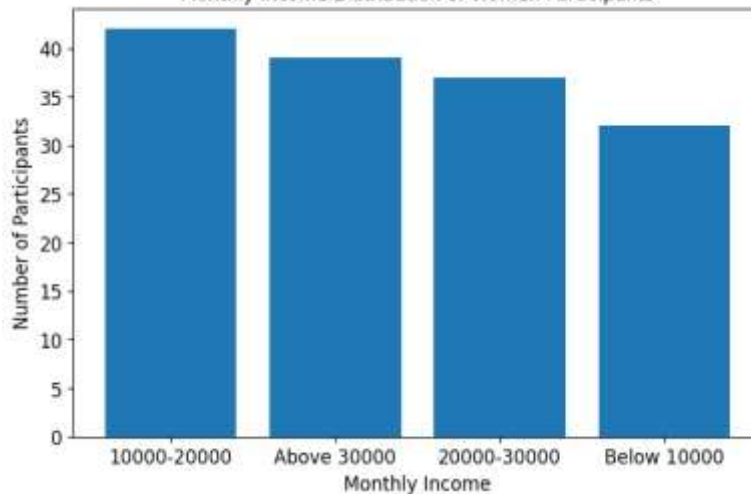
Monthly Income Distribution of Women Participants



**Interpretation:**

The pie chart shows that most women participants earn between ₹10,000–₹20,000 per month (28%). Around 26% earn above ₹30,000, while 24.7% earn between ₹20,000–₹30,000. Only 21.3% earn below ₹10,000. The findings indicate that AI-enabled microfinance services have positively influenced women’s income generation and economic empowerment in Mysore district.

Monthly Income Distribution of Women Participants



**Interpretation:**

The bar graph shows that the highest number of women participants earn between ₹10,000–₹20,000 per month, followed by those earning above ₹30,000. Fewer participants fall below ₹10,000 income category.

The findings suggest that AI-enabled microfinance services have positively contributed to improving income levels and economic stability among women in Mysore district.

### KEY FINDINGS

1. AI-enabled microfinance services significantly improved women's financial inclusion by providing easier access to digital banking, online transactions, and formal credit facilities in Mysore district.
2. Most women participants reported increased income generation after utilizing AI-based microfinance services, indicating positive economic empowerment and entrepreneurial development.
3. Digital financial literacy among women improved considerably through the use of AI-supported financial platforms, mobile applications, and digital payment systems.
4. AI-driven credit assessment systems enhanced accessibility to loans by reducing procedural delays and simplifying the loan approval process for women beneficiaries.
5. Women participants experienced better decision-making power within households due to improved financial independence and enhanced economic contribution.
6. A positive relationship was identified between AI service satisfaction and socio-economic empowerment, showing that effective AI-based financial services contribute to higher empowerment levels.
7. The study found that AI-enabled microfinance services support overall socio-economic development, including improved savings habits, financial security, self-confidence, and economic stability among rural and semi-urban women.

### SUGGESTIONS

1. AI-enabled microfinance institutions should conduct regular digital financial literacy programs to help women effectively use mobile banking, digital payments, and AI-based financial applications.
2. Government and financial institutions should expand AI-supported microfinance services in rural areas to ensure greater financial inclusion and accessibility for economically weaker women.
3. Training programs on entrepreneurship and income-generating activities should be provided to enhance women's economic independence and self-employment opportunities.
4. Microfinance providers should simplify AI-based loan procedures and improve user-friendly digital platforms to encourage more women to access financial services confidently.
5. Awareness campaigns regarding the benefits of AI-enabled financial services should be organized to reduce technological fear and improve adoption among rural women.
6. Financial institutions should introduce customized loan schemes and low-interest credit facilities for women entrepreneurs to promote sustainable business growth.
7. Continuous technical support and cybersecurity awareness should be ensured to build trust and confidence among women users in digital financial systems.
8. Collaboration between government agencies, NGOs, and fintech companies should be strengthened to improve the effectiveness and outreach of AI-enabled microfinance services.
9. AI-based financial services should focus on personalized financial guidance and savings management to improve long-term socio-economic stability among women beneficiaries.
10. Further research can be conducted in different districts and larger populations to examine the long-term impact of AI-enabled microfinance services on women empowerment.

## CONCLUSION

The present study examined the socio-economic empowerment of women through AI-enabled microfinance services in Mysore district and identified a significant positive contribution of artificial intelligence-driven financial technologies toward women's empowerment and inclusive development. The findings demonstrate that AI-supported microfinance systems have enhanced women's access to formal financial services, improved digital financial literacy, and strengthened income-generation opportunities. The integration of AI technologies in microfinance institutions has facilitated faster loan processing, personalized financial guidance, efficient credit assessment, and secure digital transactions, thereby reducing financial exclusion among women beneficiaries.

The statistical analyses, including correlation, regression, and chi-square tests, revealed a positive association between AI-enabled financial services and socio-economic empowerment indicators such as financial inclusion, decision-making power, economic independence, and income stability. The study further highlights that women participants experienced increased confidence, improved entrepreneurial participation, and greater involvement in household financial decisions after adopting AI-based microfinance services.

Moreover, the research emphasizes the transformative role of digital financial ecosystems in promoting sustainable rural development and reducing gender-based economic disparities. Despite certain challenges related to digital awareness and technological accessibility, the overall impact of AI-enabled microfinance services remains highly significant in enhancing women's socio-economic conditions. The study concludes that strengthening digital infrastructure, expanding financial literacy initiatives, and promoting inclusive AI-driven financial policies can further accelerate women empowerment and contribute to long-term socio-economic development in rural and semi-urban regions.

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