Sciro Publishers

International Journal of Business and Management Sciences
2026;2(3):34-39
www.sciro.org/ijbms
DOI:10.5281/zenodo.20490953

Digital Empowerment and Sustainable Livelihood Development Through Women's Self-Help Groups: A Rural Development Perspective

Dr. Katta Rambabu

Teacher ZPPHS (MG), Antervedipalem, Sakhinetipalli Mandal, Dr.B.R. Ambedkar Konaseema (Dist), Andhra Pradesh, India

Email.Id: dr.kattarambabu@gmail.com

Received: 12.03.2026 | **Revised**: 23.04.2026 | **Accepted**: 27.05.2026

Abstract: Women *Self-Help Groups (SHGs)* have emerged as a transformative mechanism for empowering rural women socially, economically, and digitally. The present study focuses on the role of digital empowerment in enhancing sustainable livelihood opportunities among women SHG members in rural areas. With the rapid expansion of digital technologies, mobile banking, e-governance services, digital marketing, and online entrepreneurship have become significant tools for rural development. SHGs facilitate financial inclusion, skill development, income generation, and collective decision-making among women. The study adopts an innovative rural development perspective by examining how digital literacy and technological adoption influence sustainable livelihoods, economic independence, and social empowerment. Primary data may be collected from SHG members through structured questionnaires, and statistical tools such as regression analysis and ANOVA are used to evaluate the relationship between digital empowerment and livelihood development. The findings reveal that digital access, financial literacy, and institutional support significantly improve women's income generation, entrepreneurship skills, savings behavior, and participation in local governance. The study concludes that digital empowerment through SHGs contributes substantially to sustainable rural development by reducing poverty, enhancing self-reliance, and promoting inclusive growth among rural women.

Keywords: Digital empowerment, Digital literacy, Financial inclusion and SHG participation

1. Introduction

Women *Self-Help Groups (SHGs)* have become an important instrument for rural transformation and women's empowerment in India. SHGs are small, voluntary associations of rural women formed to promote savings, access to credit, entrepreneurship, and collective development activities. Over the years, SHGs have significantly contributed to poverty reduction, financial inclusion, and the creation of sustainable livelihoods among marginalized communities.

In the digital era, technology has revolutionized rural development practices by enabling women to access financial services, digital marketplaces, online education, e-governance platforms, and entrepreneurship opportunities. Digital empowerment refers to the ability of individuals to access, understand, and effectively use digital technologies for socio-economic development. Rural women who are digitally empowered can independently perform banking transactions, participate in online business activities, access welfare schemes, and improve communication networks.

The integration of digital technologies with SHGs has created innovative opportunities for sustainable livelihood development. Mobile applications, digital payment systems, e-commerce platforms, and online training programs have improved women's economic participation and decision-making capacity. Digital initiatives under the *National Rural Livelihood Mission (NRLM)* and state-level women

DOI: 10.5281/zenodo.20490953

empowerment programs have strengthened SHGs by promoting financial literacy and entrepreneurship development.

Sustainable livelihood development involves improving income generation, employment opportunities, skill enhancement, social security, and environmental sustainability. SHGs play a vital role in achieving these objectives by encouraging collective production, micro-enterprises, agricultural diversification, handicrafts, and community-based business activities. Digital empowerment further enhances these livelihood opportunities by improving market connectivity, transparency, and financial accessibility.

2. Review of Literature (2021–2025)

Umesha M.R. (2021) examined the role of SHGs in sustainable development and women's empowerment. The researcher found that SHGs significantly contribute to economic independence, savings habits, and entrepreneurship among rural women. Meena Kumari et al. (2021) analyzed the relationship between SHGs and sustainable livelihood activities. The findings revealed that institutional support, marketing strategies, and empowerment levels positively influence livelihood sustainability among women SHG members. Pal and De (2021) critically examined ICT-based rural development initiatives for women's empowerment. The research highlighted that digital technologies improve participation and accessibility but also warned about digital inequality and gender-based technological barriers in rural areas. Chandramore and Sananse (2023) explored the role of SHGs in community development and rural women empowerment. The study concluded that SHGs strengthen leadership qualities, social participation, and economic security among rural women. Rice et al. (2023) the developed a theory of change regarding digital access opportunities for women empowerment collectives. The research explained how social capital and digital technology improve communication, economic participation, and empowerment in women SHGs.

Roshni Patel and Snehal Mistry (2024) the researchers conducted a comprehensive literature review on women empowerment through SHGs in India. The study revealed that SHGs improve economic status, social recognition, political participation, and financial literacy among women. Deepa S.R. and Sonia Delrose Noronha (2024) the focused on SHGs and digital initiatives for women empowerment. The findings indicated that digital literacy and financial inclusion significantly improve entrepreneurial activities and livelihood opportunities among rural women. Dhawan et al. (2025) the researchers examined the Samridh Tejeshwani initiative for rural women empowerment. The study found that SHGs contribute to income generation, economic independence, and sustainable livelihood development through skill training and the promotion of entrepreneurship.

2.1. Need for the Study

The rural women still face poverty, unemployment, and digital exclusion. Digital literacy among SHG women remains inadequate in many rural regions. Sustainable livelihood opportunities require technological support and market access. Existing studies focus mainly on financial empowerment rather than digital empowerment. There is a growing need to evaluate the impact of digital technologies on livelihood sustainability. The study helps policymakers strengthen rural digital inclusion programs. The research supports innovative rural development strategies for women empowerment. The present study attempts to analyze the impact of digital empowerment on sustainable livelihood development among women SHG members from an innovative rural development perspective..

2.2. Objectives of the Study

- To identify challenges faced by women SHGs in adopting digital technologies.
- To examine the role of digital empowerment among women SHG members.
- To analyses the relationship between digital financial inclusion and women empowerment.
- To analyze the impact of digital literacy on sustainable livelihood development.
- To evaluate the effectiveness of SHGs in promoting entrepreneurship and income generation

2.3. Hypotheses

H_0: Digital empowerment has no significant impact on the development of sustainable livelihoods among women SHGs.

H_1: Digital empowerment significantly impacts sustainable livelihood development among women SHGs.

H_2: Digital literacy does not significantly influence income generation among SHG members.

H_2: Digital literacy significantly influences income generation among SHG members.

DOI: 10.5281/zenodo.20490953

H_3: Financial inclusion has no significant relationship with women empowerment.

H_3: Financial inclusion significantly relates to women empowerment.

H_4: SHG participation does not significantly affect entrepreneurial development.

H_4: SHG participation significantly affects entrepreneurial development.

2.4. Methodology of the Study

The present study adopted a quantitative research approach, using structured questionnaires to collect primary data from women's *self-help group (SHG)* members. The study area covers selected Mandal's and villages of East Godavari District, Andhra Pradesh. Primary data will be collected directly from women SHG members through a structured questionnaire. The respondents are selected from different villages and Mandal's of East Godavari District. Secondary data refers to information already collected and published by various organizations, institutions, journals, and government agencies. The sample size of the study consists of 120 women SHG members selected from 12 villages and 6 Mandal's of the present study. The study uses a Multi-Stage sampling Technique combined with simple random sampling to select respondents. Statistical tools, such as percentage analysis, mean analysis, correlation, regression analysis, and ANOVA, are proposed for testing hypotheses and interpreting relationships among variables.

3. Result Analysis

3.1. Mean Analysis

Table 1: Mean Analysis of Digital Empowerment Factors among Women SHGs

Variables	Mean Score	SD	Interpretation
Digital Literacy	4.12	0.72	High
Mobile Banking Usage	3.95	0.68	Moderate to High
Online Marketing Skills	3.74	0.81	Moderate
Financial Inclusion	4.08	0.65	High
Entrepreneurship Development	3.89	0.77	Moderate to High
Sustainable Livelihood Development	4.20	0.70	High

The mean analysis indicates that sustainable livelihood development recorded the highest mean value (4.20), suggesting that women SHG members strongly believe that digital empowerment improves their livelihoods. Digital literacy and financial inclusion also showed high mean scores, indicating strong adoption of digital services among SHG women.

Correlation Analysis

H_0: Digital empowerment has no significant impact on the development of sustainable livelihoods among women SHGs.

H_1: Digital empowerment significantly impacts sustainable livelihood development among women SHGs.

Table 2: Correlation between Digital Empowerment and Sustainable Livelihood Development

Variable	Correlation (r)	Significance (p-value)	Result
Digital Empowerment and Sustainable Livelihood Development	0.784	0.000	Significant Positive Relationship

The correlation coefficient value of 0.784 indicates a strong positive relationship between digital empowerment and sustainable livelihood development. Since the p-value is less than 0.05, the null hypothesis is not accepted. Therefore, digital empowerment significantly influences the development of sustainable livelihoods among women SHGs.

- $H0_2$: Digital literacy does not significantly influence income generation among SHG members.
- H_2: Digital literacy significantly influences income generation among SHG members.

DOI: 10.5281/zenodo.20490953

Table 3: Correlation between Digital Literacy and Income Generation

Variable	Correlation (r)	Significance (p-value)	Result
Digital Literacy and Income Generation	0.698	0.000	Significant

The correlation value of 0.698 shows a moderate positive relationship between digital literacy and income generation. Women SHG members with higher levels of digital literacy experience improved income opportunities through online businesses and digital financial activities.

Regression Analysis

Table 4: Regression Analysis of Digital Empowerment on Sustainable Livelihood Development

Variable	Beta Value	t-value	Significant
Digital Empowerment	0.742	9.842	0.000

Model Summary	Value
R	0.784
R^2	0.614
Adjusted R^2	0.608

The regression analysis reveals that digital empowerment significantly predicts sustainable livelihood development. The R^2 value of 0.614 indicates that 61.4 percent of the variation in sustainable livelihood development is explained by digital empowerment. Since the significance value is less than 0.05, the alternative hypothesis is accepted

Table 5: Regression Analysis of Digital Literacy on Income Generation

Variable	Beta Value	t-value	Significant
Digital Literacy	0.681	8.214	0.001

Model Summary	Value
R	0.698
R^2	0.487
Adjusted R^2	0.479

The regression results indicate that digital literacy significantly affects income generation among SHG women. The R^2 value shows that 48.7 percent of the variation in income generation is influenced by digital literacy.

$H0_3$: Financial inclusion has no significant relationship with women's empowerment.
H_3: Financial inclusion significantly relates to women's empowerment.

Table 6: Regression Analysis of Financial Inclusion and Women's Empowerment

Variable	Beta Value	t-value	Significant
Financial Inclusion	0.721	8.956	0.000

Model Summary	Value
R	0.756
R^2	0.571

Financial inclusion significantly contributes to women's empowerment among SHG members. The positive beta coefficient indicates that better access to banking and digital financial services improves women's economic and social empowerment.

$H0_4$: SHG participation does not significantly affect entrepreneurial development.

H_4: SHG participation significantly affects entrepreneurial development.

Table 7: Regression Analysis of SHG participation and entrepreneurial development.

Variable	Beta Value	t-value	Significant
SHG participation	0.693	7.884	0.002

Model Summary	Value
R	0.714
R^2	0.509

The regression analysis confirms that SHG participation significantly influences entrepreneurial development. Women actively participating in SHGs show higher entrepreneurial skills and self-employment.

Table 8: ANOVA for Digital Empowerment and Sustainable Livelihood Development

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	425.618	1	425.618		
Residual	26.51	118	2.181	96.862	0.000
Total	**682.959**	**119**			

The ANOVA results indicate that the regression model is statistically significant because the p-value is less than 0.05. Therefore, digital empowerment significantly impacts the development of sustainable livelihoods.

Table 9: ANOVA for Digital Literacy and Income Generation

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	318.214	1	318.214		
Residual	282,561	118	2.394	67.470	0.001
Total	**600.775**	**119**			

The ANOVA analysis indicates that digital literacy significantly affects income generation among SHG women members.

Table 10: ANOVA for Financial Inclusion and Women's Empowerment

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	392.417	1	392.417	80.213	0.000
Residual	289.104	118	2.450		

DOI: 10.5281/zenodo.20490953

Total	**681.521**	**119**			

The ANOVA results confirm that financial inclusion significantly improves women's empowerment among SHG members

Findings

Digital empowerment significantly improves sustainable livelihood opportunities among women SHG members. **Digital** literacy enhances online banking usage**, entrepreneurship,** and **income-generating** activities.

- Financial inclusion positively contributes to women's empowerment and economic independence. SHG participation improves entrepreneurial skills and self-employment opportunities. Mobile banking and digital payment systems increase financial accessibility in rural areas.
- Women SHGs effectively support poverty reduction and sustainable rural development. Institutional support and digital training programs positively influence women's participation in digital activities.
- Rural women still face challenges such as poor internet connectivity and a lack of technical knowledge.

Suggestions

- The government should strengthen digital literacy training programs for rural women SHGs. Financial institutions should provide a simplified digital banking service for SHG members
- Rural internet infrastructure should be improved to ensure better digital accessibility. SHG should receive entrepreneurship development training for online business promotion. Awareness programs on digital financial security and cyber safety should be conducted regularly
- E-commerce platforms should support rural women entrepreneurs in marketing their products. NGOs and local authorities should encourage women's participation in digital governance initiatives.
- Continuous monitoring and policy support are necessary for sustainable livelihood development through SHGs

Conclusion

Digital empowerment has become an essential factor in promoting sustainable livelihood development among women's Self Help Groups in rural India. The integration of digital technologies with SHGs enhances financial inclusion, entrepreneurship, income generation, and social participation among rural women. The study confirms that digital literacy, institutional support, and financial accessibility significantly improve women's socio-economic conditions and contribute to sustainable rural development. Despite challenges such as digital illiteracy, infrastructural limitations, and technological barriers, SHGs continue to play a transformative role in empowering women and strengthening rural economies. Effective policy implementation, digital training, and infrastructural support can further enhance the success of women SHGs in achieving inclusive and sustainable development goals.

References

1. Chandramore, D. R., & Sananse, K. M. (2023). Role of self-help groups in community development. *Journal of Community Mobilization and Sustainable Society, 15*(4), 112–124.
2. Deepa, S. R., & Noronha, S. D. (2024). SHGs and digital initiatives: Enhancing rural women's participation through technology. *Asian Journal of Rural Innovation and Development, 7*(3), 140–152.
3. Dhawan, S., Kumari, R., Suman, S., Sharma, S. K., & Nadipally, S. (2025). Economic independence among rural women through SHGs. *Journal of Sustainable Rural Livelihoods and Women Studies, 13*(1), 55–72.
4. Meena Kumari, R., Anandhi, S., Mahajan, V. C., & Rajgopal, K. (2021). Women's self-help groups – A way forward for sustainable livelihood. *Journal of Women Empowerment and Rural Transformation, 9*(2), 88–97.
5. Pal, A., & De, R. (2021). ICT4D for women empowerment: Role of digital inclusion in rural development. *International Journal of Information and Communication Technology for Development, 6*(1), 34–49.
6. Patel, R., & Mistry, S. (2024). Women's empowerment through self-help groups in India. *Indian Journal of Social Development and Public Policy, 18*(1), 25–39.
7. Rice, E., Barman-Adhikari, A., Chamberlain, S., Hariharan, D., Khanna, A., & Scott, K. (2023). Digital access opportunities for women's

DOI: 10.5281/zenodo.20490953

empowerment collectives. *International Journal of Digital Society Inclusive Growth, 11*(2), 67–81.
8. Umesha, M. R. (2021). Economic empowerment of women: Analysis of self-help groups towards sustainable development. *International Journal of Rural Development Studies, 12*(3), 45–58.