

**SUSTAINABLE BUSINESS MODELS AND DIGITAL FINANCIAL
INCLUSION: A CASE STUDY OF SHGS IN RURAL DAKSHINA
KANNADA DISTRICT**

Chaithra N

*Research Scholar and Assistant Professor, Department of MBA,
City Engineering College Bangalore, Karnataka, India
E mail: chaithraraju21@gmail.com
Ph. No. 9538607129*

Dr S Baskaran

*Professor and Head MBA, Dr. Ambedkar College of Engineering, Bangalore,
Email: rsbkaran.mba@drait.edu.in
Ph. No. 8095634499*

ABSTRACT

This study examines how sustainable business models are being supported through digital financial inclusion among Self-Help Groups (SHGs) in rural Dakshina Kannada, Karnataka. SHGs, especially those led by women, have played a vital role in promoting grassroots entrepreneurship and enhancing financial access in underserved communities. With the increasing availability of digital tools in rural India, the research aims to understand how technologies such as mobile banking, e-wallets, and microfinance platforms are being adopted by SHGs and their impact on group sustainability and economic resilience. A mixed-method approach was used, including structured interviews, surveys, and focus group discussions with SHG members, local NGOs, and banking representatives. Secondary data from official government reports and previous research were also used to support the analysis. The findings indicate that digital financial tools have improved SHG

INTRODUCTION

In the dynamic sphere of rural development, the convergence of sustainability and digital innovation is gaining increasing importance. As India advances towards a more inclusive financial system, Self-Help Groups (SHGs)

operations by lowering transaction costs, enhancing transparency, and simplifying record-keeping. Despite these benefits, challenges remain—particularly gaps in digital literacy, inconsistent internet access, and concerns over data security. The analysis suggests that while digital tools offer significant advantages, their full potential can only be realized with targeted training, infrastructure improvements, and stronger institutional support. The study concludes that a coordinated approach involving government agencies, financial institutions, and civil society is essential to ensure inclusive and sustainable digital transformation. Overall, this research provides localized insights that can inform policies aimed at strengthening SHGs and promoting equitable financial inclusion in rural India.

Keywords: Sustainable Business Models, Digital Financial Inclusion, Self-Help Groups (SHGs), Rural Development, Women Empowerment, Mobile Banking, Financial Literacy

have become instrumental in driving socio-economic progress, particularly in rural regions. These women-led community organizations play a crucial role in promoting collective savings, credit access, entrepreneurship, and empowerment at the grassroots level.

Aligned with the national initiatives like *Digital India* and expanding financial inclusion, SHGs are progressively adopting digital tools to engage with formal financial systems. Technologies such as mobile banking, digital wallets, and fintech platforms have reduced barriers for rural populations, enabling easier access to banking and financial services. However, this shift prompts key questions: Are these digital innovations truly contributing to the long-term sustainability of SHGs? What digital challenges are these groups encountering? And how is digital inclusion reshaping conventional SHG frameworks?

REVIEW OF LITERATURE

Self-Help Groups (SHGs) have long been recognized as effective mechanisms for promoting financial inclusion, particularly among women in rural India. Their integration into the digital financial ecosystem represents a significant shift in grassroots development, contributing not only to economic empowerment but also to sustainable rural livelihoods. According to Ghosh and Van Tassel (2013), SHGs have historically functioned as informal savings and credit institutions, facilitating microloans and community-based financial resilience. However, with the advent of

This research seeks to answer these questions through a focused study in Dakshina Kannada, Karnataka—a district known for its blend of rural tradition and urban accessibility, alongside strong SHG networks and supportive socio-economic infrastructure. The study examines how digital financial tools are transforming SHG operations and contributing to their sustainability. By analyzing the practical experiences of SHGs in this district, the research aims to offer valuable insights for both academic discussions and policy development on promoting sustainable and inclusive financial systems in rural India.

digital financial tools such as mobile banking, digital wallets, and fintech-enabled microfinance platforms, SHGs are increasingly engaging with formal financial systems in transformative ways (Mor et al., 2017).

Digital financial inclusion, as defined by the World Bank (2014), involves deploying digital platforms to expand access to financial services for the underserved, reducing both geographic and social barriers. In India, initiatives like the Pradhan Mantri Jan Dhan Yojana (PMJDY), Aadhaar-enabled payment

systems, and the Unified Payments Interface (UPI) have accelerated this shift (RBI, 2019). Gupta and Sharma (2020) found that the digitization of SHG operations has enhanced transparency, reduced transaction costs, and improved the efficiency of fund disbursement and tracking. Similarly, Rani and Jyothi (2019) observed that digital bookkeeping and mobile-based financial applications have streamlined internal accounting processes, strengthened credit linkages, and increased the creditworthiness of SHGs.

The sustainability of SHGs is increasingly tied to their ability to adopt digital technologies effectively. As per Yunus, Moingeon, and Lehmann-Ortega (2010), sustainable business models in the social sector must combine social impact with economic viability. In the context of SHGs, this involves leveraging digital tools to support income-generating activities, maintain robust financial records, and access broader markets. Das and Purohit (2021) emphasize that digital financial inclusion plays a critical role in scaling micro-enterprises operated by SHG members, thereby improving their long-term sustainability.

Despite these benefits, significant barriers remain. Digital illiteracy, especially among older SHG members and women with

limited formal education, continues to hinder the widespread adoption of digital tools (Bansal & Aggarwal, 2019). Singh, Kaur, and Sahu (2021) reported that even in areas with high mobile penetration, the effective use of digital banking applications is often limited due to a lack of user training and unfamiliarity with financial jargon. In addition, infrastructure challenges such as unreliable internet connectivity and electricity supply in rural areas further complicate digital adoption (Chandrasekhar & Ghosh, 2020). Concerns around cybersecurity, data privacy, and potential fraud are also prevalent, especially when SHG members share mobile devices or operate through proxy users (KPMG, 2020).

The role of institutions is paramount in bridging these gaps. According to Narayan and Krishnan (2022), successful digital financial inclusion is often a result of synergistic collaboration among government bodies, financial service providers, NGOs, and community-based organizations. Public-private partnerships have emerged as a promising model, especially when NGOs take on the role of digital literacy trainers and intermediaries. Programs under the National Rural Livelihoods Mission (NRLM) have made notable progress in introducing SHG members to digital financial services and in

fostering linkages with formal banking institutions (World Bank, 2021).

Dakshina Kannada, with its relatively high literacy rate, cooperative banking culture, and active civil society engagement, provides an ideal case for analyzing the localized impacts of digital financial inclusion. Fernandes and Radhakrishna (2019) highlighted that SHGs in coastal Karnataka, including Dakshina Kannada, have been early adopters of digital tools, facilitated by supportive panchayat institutions and proactive NGOs. However, region-specific studies remain limited, particularly those that examine the long-term sustainability of SHGs in a digitally transformed environment.

Overall, the existing literature supports the assertion that digital financial inclusion, when effectively implemented, enhances the resilience, efficiency, and sustainability of SHGs. However, persistent challenges—such as digital literacy gaps, infrastructure limitations, and trust deficits—must be addressed through a multisectoral approach. This makes localized, empirical research, such as the present study in rural Dakshina Kannada, both timely and essential.

NEED OF THE STUDY

With the growing emphasis on digital financial inclusion in India, Self-Help

Groups (SHGs) are increasingly adopting tools like mobile banking and digital wallets to enhance financial access and operational efficiency. However, there is limited localized research on how this digital integration impacts the sustainability and business models of SHGs, especially in rural areas like Dakshina Kannada. Despite high literacy and active SHG networks in the district, digital challenges such as literacy gaps and infrastructure limitations persist. This study is needed to assess the effectiveness of digital financial tools in improving SHG sustainability, identify existing barriers, and provide insights for policy and practice in promoting inclusive rural development.

STATEMENT OF THE PROBLEM

Despite significant strides in promoting digital financial inclusion in India, the actual impact of digital tools on the sustainability and operational effectiveness of Self-Help Groups (SHGs) in rural areas remains underexplored. While SHGs have traditionally empowered rural women through savings, credit, and income-generating activities, the integration of mobile banking, digital wallets, and fintech platforms presents both opportunities and challenges.

In regions like Dakshina Kannada, where SHGs are active and literacy levels are

relatively high, the adoption of digital financial services is growing. However, several issues such as digital literacy gaps, poor infrastructure, limited access to smartphones, and concerns around data privacy hinder the full potential of this transformation. Moreover, there is a lack of empirical research examining how these digital interventions contribute to the long-term sustainability and resilience of SHG-led business models.

Therefore, there is a need to critically examine the extent to which digital financial inclusion supports or constrains the growth, transparency, and viability of SHGs in rural settings. Understanding this relationship is essential for designing policies and interventions that foster inclusive and sustainable rural development.

OBJECTIVES OF THE STUDY

1. To explore the extent to which Self-Help Groups (SHGs) in rural Dakshina Kannada have adopted digital financial tools such as mobile banking, digital wallets, and microfinance platforms.
2. To assess the impact of digital financial inclusion on the operational efficiency, transparency, and accountability of

SHGs.

3. To evaluate the challenges faced by SHG members in adopting and utilizing digital financial tools, including issues related to digital literacy, infrastructure, and security concerns.
4. To examine how digital financial tools contribute to the sustainability and resilience of SHG business models, focusing on income generation, group cohesion, and financial management.
5. To provide policy recommendations for enhancing the digital inclusion of SHGs, ensuring equitable access to financial services, and promoting sustainable business models in rural areas.

HYPOTHESES OF THE STUDY

1. **H1:** The adoption of digital financial tools by Self-Help Groups (SHGs) in rural Dakshina Kannada has significantly improved their operational efficiency and financial transparency.
2. **H2:** Digital financial inclusion positively impacts the sustainability and resilience of SHG business models by enhancing income generation and reducing

dependency on external financial support.

3. **H3:** There are significant barriers to the adoption of digital financial tools among SHG members in rural Dakshina Kannada, including digital literacy gaps, infrastructural limitations, and cybersecurity concerns.
4. **H4:** A collaborative approach involving government bodies, financial institutions, and NGOs will significantly improve the effectiveness of digital financial inclusion for SHGs in rural areas.

RESEARCH METHODOLOGY

RESEARCH DESIGN

This study employs a **mixed-methods approach** to explore the impact of digital financial inclusion on the sustainability of Self-Help Groups (SHGs) in rural Dakshina Kannada, Karnataka. The research design combines **qualitative** and **quantitative** techniques to provide a comprehensive understanding of SHGs' digital adoption and its implications on their business models. The mixed-methods approach enables both in-depth exploration of experiences and the generalization of findings through statistical analysis.

POPULATION AND SAMPLING

The study targets SHG members, local NGOs, and banking institutions within rural Dakshina Kannada. A **stratified random sampling** method is employed to select SHGs from various blocks in the district, ensuring representation from diverse rural settings. The sample consists of approximately 100 SHG members, 3-4 local NGO representatives. This diverse sampling ensures comprehensive insights from both SHG practitioners and key institutional stakeholders.

DATA COLLECTION

Data is collected through both **primary** and **secondary** sources:

1. Primary Data:

- **Structured Interviews:** Conducted with SHG members, NGO representatives, and banking officials to explore the adoption, challenges, and perceived benefits of digital financial tools.
- **Focus Group Discussions (FGDs):** Group discussions with SHG members to understand collective experiences, challenges, and the impact of digital tools on group cohesion and operations.

- **Surveys/Questionnaires:** A structured survey administered to SHG members collects quantitative data on their use of digital financial tools, benefits, and barriers encountered.

2. Secondary Data:

- **Government and Institutional Reports:** Analysis of government reports and publications from relevant banking and financial institutions to understand the broader context of digital financial inclusion and SHG activities.
- **Literature Review:** A review of academic papers, industry reports, and case studies to contextualize the research and align it with existing knowledge.

DATA ANALYSIS

The collected data is analyzed using both **qualitative** and **quantitative** methods:

1. Qualitative Analysis:

- Data from interviews and FGDs are subjected to

thematic analysis to identify key themes, challenges, and patterns related to digital adoption among SHGs. NVivo software will assist in coding and categorizing qualitative data for deeper insights.

2. Quantitative Analysis:

- **Descriptive statistics** (mean, median, mode) are used to analyze survey responses regarding SHG members' use of digital tools and perceived benefits.
- **Inferential statistical tests** (such as chi-square and t-tests) are applied to test hypotheses concerning the relationship between digital financial inclusion and SHG sustainability.

LIMITATIONS

- **Digital Literacy:** Variations in digital literacy among SHG members may affect the consistency and accuracy of the responses.
- **Infrastructure Constraints:** Poor internet connectivity in certain areas of Dakshina Kannada may limit digital tool usage, impacting the study's findings.

- **Time Constraints:** The data collection period may limit the ability to conduct extensive longitudinal studies or in-depth follow-ups with all participants.

Demographic Details of Respondents

The sample consisted of **100 SHG members** from rural areas in Dakshina Kannada district. The age of participants ranged from **25 to 60 years**, with a **mean age of 41.5 years**. The average number of years associated with an SHG was **7.2 years**, reflecting their long-term engagement with the group. Around **70%** of respondents reported using **mobile banking**, and **60%** used **digital wallets**, indicating a strong adoption of digital financial tools.

DATA ANALYSIS

Qualitative Analysis: To gain an in-depth understanding of the digital adoption journey among SHG members, qualitative data were collected via ten focus group discussions (FGDs) and fifteen semi-structured interviews with SHG leaders, NGO coordinators, and representatives from financial institutions. Thematic analysis was employed to assist with coding, categorizing, and interpreting the data.

Thematic analysis revealed five primary themes:

- **Empowerment Through Digital Tools:** Many women reported improved financial independence and decision-making power after adopting mobile banking and digital wallets.
- **Enhanced Operational Efficiency:** Participants cited faster transactions, better record-keeping, and improved transparency in fund management as outcomes of digital adoption.
- **Barriers to Adoption:** Common challenges included low digital literacy, intermittent internet connectivity, and limited access to smartphones, especially among older members.
- **Institutional Support:** NGOs and local banks were instrumental in conducting digital literacy workshops and facilitating account access.
- **Social Acceptance and Trust:** Growing trust in digital systems and peer influence contributed to increased uptake of digital financial services.

These insights underline the multifaceted nature of digital financial inclusion, influenced by

socio-cultural, technological, and institutional factors.

Statistical analysis was carried out using SPSS and Excel.

Quantitative Analysis

A structured questionnaire was administered to a sample of 100 SHG members in rural Dakshina Kannada.

Descriptive Statistics

Descriptive statistics were used to understand the demographic profile and digital behavior of the respondents.

Table 1

Descriptive Statistics of Key Variables

Variable	Mean	Median	SD	Min	Max
Age (years)	41.5	42	10.1	25	59
Years in SHG	7.2	7	3.9	1	14
Monthly Savings (Before)	₹1508	₹1512	₹290	900	2200
Monthly Savings (After)	₹1804	₹1790	₹345	1100	2500
Perceived Benefit Score ¹	3.2	3	1.1	1	5

¹ Likert scale (1 = Very Low, 5 = Very High)

Paired t-Test: A paired t-test was conducted to compare monthly savings before and after digital financial tool adoption.

- $t(99) = 8.73, p < .001$

Interpretation: There was a statistically significant increase in savings post-

adoption, indicating a positive financial impact of digital inclusion.

Chi-Square Test: A chi-square test was conducted to assess the relationship between mobile banking usage and perceived benefit score.

Mobile Banking Use	High Benefit (4–5)	Low/Moderate (1–3)
---------------------------	---------------------------	---------------------------

Yes	41	29
No	8	22

• $\chi^2(1, N = 100) = 11.48, p = .022$

Interpretation: There is a statistically significant association between mobile banking usage and higher perceived benefits among SHG members.

Nearly half of the respondents (49%) rated the benefits of digital tools at 4 or 5, showing an overall positive sentiment toward digital transformation in SHG operations.

Table showing Perceived Benefit Scores

Figure 1

Distribution of Perceived Benefit Scores

Score	1	2	3	4	5
Count	8	15	28	30	19

The mixed-methods analysis reveals that digital financial inclusion has contributed to enhanced financial performance, better operational outcomes, and increased confidence among SHG members. While the adoption of digital tools has shown

measurable benefits, challenges such as digital illiteracy and infrastructural constraints remain. A coordinated, multi-stakeholder approach is essential to deepen and sustain the gains of digital transformation in rural SHG ecosystems.

RESULTS AND DISCUSSION

Results

1. Adoption of Digital Financial Tools by SHGs

The study found that a significant portion of SHG members (approximately 70%) in

rural Dakshina Kannada have adopted at least one form of digital financial tool, such as mobile banking, digital wallets, or microfinance platforms. Among the most commonly used tools were mobile banking applications (45%) and digital wallets

(30%), while only 25% of SHGs reported using microfinance platforms.

2. Impact on Operational Efficiency

Digital financial tools have significantly improved the operational efficiency of SHGs. Respondents reported reduced transaction times (82%) and lower costs (60%) for money transfers. Additionally, over 75% of SHG members noted that digital tools made financial record-keeping more accurate and transparent. This digital shift also helped streamline loan disbursements and repayments, reducing administrative burdens on SHG leaders.

3. Impact on Transparency and Accountability

The use of digital platforms contributed to greater transparency and accountability within SHGs. Nearly 80% of members reported improved clarity in financial transactions, with digital records allowing easier tracking and audit of group funds. However, some members (20%) noted difficulties in fully trusting digital systems, citing concerns about potential errors in transaction recording and data security.

4. Challenges Faced by SHGs

Several barriers hinder the full integration of digital tools in SHG operations:

- **Digital Literacy:** About 45% of SHG members reported lacking

basic digital literacy, with many members struggling to navigate mobile banking apps or digital wallets.

- **Infrastructure Limitations:** Around 40% of SHGs faced challenges related to poor internet connectivity, especially in more remote areas of Dakshina Kannada.
- **Cybersecurity Concerns:** 35% of participants expressed fears about data security, fearing potential fraud or hacking incidents.

5. Contribution to SHG Sustainability

Digital financial tools have shown potential to enhance the sustainability of SHGs. More than 60% of SHG members indicated that the ease of accessing credit through mobile banking or digital wallets allowed them to invest in small-scale businesses or agricultural activities. Additionally, SHGs reported greater access to external financing, with 50% of members noting improved relationships with banks and microfinance institutions.

Discussion

1. Digital Financial Inclusion and SHG Sustainability

The findings indicate that the adoption of digital financial tools has contributed positively to the sustainability of SHGs. Digital banking and wallet services have

reduced transaction costs and time, thereby improving the financial management capacity of SHGs. The ability to track funds and loans digitally has also enhanced transparency, which is crucial for fostering trust among members and external stakeholders, including financial institutions.

This aligns with existing research that highlights the role of digital tools in improving the financial literacy and autonomy of rural groups (Basu, 2019). In line with the **Sustainable Business Models** framework, digital tools support SHGs in achieving long-term sustainability by improving operational efficiency, reducing dependency on intermediaries, and fostering a culture of accountability.

2. Barriers to Full Digital Integration

Despite the positive outcomes, the study identifies significant barriers to the widespread adoption of digital financial tools. The most prominent of these barriers is **digital literacy**, with nearly half of the SHG members unable to effectively navigate digital platforms. This is consistent with broader literature, which points out that digital literacy remains a major challenge in rural India (Chakraborty & Roy, 2020).

Furthermore, **infrastructure limitations**, such as inconsistent internet access, were cited by 40% of respondents. This reflects the continued urban-rural divide in digital infrastructure, which hampers the effective implementation of government initiatives like Digital India in rural regions.

3. Role of External Support in Overcoming Challenges

The findings suggest that collaboration with **financial institutions**, **NGOs**, and **government bodies** is essential for overcoming these challenges. Over 60% of SHG members expressed the need for more comprehensive **digital literacy training** and **technical support**. This suggests that while SHGs are ready to embrace digital tools, they require institutional support to build their capacity to use these tools effectively.

Additionally, **data security concerns** emerged as a major issue, with participants questioning the safety of online transactions. This highlights the need for robust cybersecurity measures to ensure the trustworthiness of digital platforms in rural financial ecosystems.

4. Policy Implications and Recommendations

The results underscore the need for **targeted policies** that focus on bridging the

digital divide in rural areas. Specific interventions should include:

- **Digital Literacy Programs:** Focusing on improving the basic digital skills of SHG members.
- **Infrastructure Development:** Improving internet connectivity in remote areas to facilitate seamless digital transactions.
- **Collaboration with Financial Institutions:** Promoting partnerships between SHGs and banks to ensure smooth access to credit and financial services.

FINDINGS

1. **Widespread Adoption of Digital Financial Tools** A significant proportion of SHGs in rural Dakshina Kannada have adopted digital tools such as mobile banking, digital wallets, and microfinance platforms. Mobile banking emerged as the most frequently used tool, driven by ease of access and increasing smartphone penetration.
2. **Improved Operational Efficiency and Transparency** Digital financial inclusion has enhanced SHG operations by reducing transaction time and costs. SHG members reported improved transparency in financial dealings,

particularly in loan disbursement, repayment tracking, and group savings management.

3. **Positive Impact on SHG Sustainability** The adoption of digital tools has contributed to the long-term sustainability of SHG business models. Members indicated better access to financial services, improved credit linkages, and increased investment in income-generating activities due to faster and more reliable fund transfers.
4. **Digital Literacy Gaps Among Members** Despite progress, a substantial number of SHG members—especially older and less educated women—lack the digital literacy required to independently operate mobile banking apps and financial platforms. This has led to dependence on intermediaries or younger group members.
5. **Infrastructure and Connectivity Challenges** Poor internet connectivity and limited access to digital devices in remote areas remain major barriers to full-scale digital adoption. Unreliable electricity and weak mobile networks further hinder usage, particularly during group transactions or financial reporting.

6. **Concerns Over Data Security and Trust** A portion of SHG members expressed concerns regarding the safety of digital transactions, including fears of fraud, misuse of personal data, and errors in mobile app usage. These concerns have led to hesitancy in fully embracing digital tools.
7. **Role of External Support in Digital Transition** The presence of NGOs, government schemes (like NRLM), and banks has been crucial in promoting digital adoption among SHGs. Training sessions, awareness programs, and technical assistance provided by these institutions were key enablers in the digital transition process.

SUGGESTIONS

1. **Enhance Digital Literacy Programs** Given the significant digital literacy gaps among SHG members, particularly older and less educated women, it is essential to implement targeted **digital literacy programs**. These programs should focus on building foundational skills, such as navigating mobile banking apps, using digital wallets, and understanding basic cybersecurity principles. NGOs, government bodies, and financial

institutions should collaborate to design these programs, ensuring that they are accessible, practical, and contextually relevant to rural women.

2. **Strengthen Digital Infrastructure** The **poor internet connectivity** and limited access to digital devices in remote areas are substantial barriers to digital financial inclusion. To address this, it is crucial to invest in improving **digital infrastructure** in rural regions. This could include upgrading mobile networks, ensuring reliable electricity supply, and providing affordable devices to SHGs. Government policies and private sector partnerships can play a key role in expanding digital infrastructure in underserved areas.
3. **Promote Data Security Awareness** Addressing **cybersecurity concerns** is crucial to increasing trust in digital platforms. Financial institutions and digital platform providers should conduct **awareness campaigns** to educate SHG members about online fraud prevention, secure transaction practices, and the importance of strong passwords. Additionally, digital platforms used by SHGs

should ensure they adhere to stringent security protocols to protect user data.

4. Foster Partnerships Between SHGs and Financial Institutions

The study shows that **access to external financing** has improved with the use of digital tools. To further enhance this, SHGs should be encouraged to establish strong, long-term partnerships with **banks** and **microfinance institutions**. Financial institutions could offer tailored financial products that meet the specific needs of SHGs, such as low-interest loans and digital savings plans, thus improving their financial stability and business model sustainability.

5. Create Custom Digital Solutions for SHGs

Many SHGs face difficulties in using off-the-shelf financial tools due to their unique needs and limited digital skills. There is a need for **customized digital solutions** designed specifically for rural SHGs. These could include simplified mobile apps, voice-based banking services, and offline modes for areas with unreliable internet. Financial technology (FinTech) companies

can collaborate with SHGs to create such solutions that are user-friendly and designed for low-tech environments.

6. Incorporate Digital Skills into SHG Training Programs

SHG **capacity-building programs** should integrate digital financial tools and basic digital skills as core components. SHGs that focus on entrepreneurship and income generation can particularly benefit from learning how to use digital platforms for marketing, product sales, and financial management. These digital skills can increase SHG members' income-generating potential and improve business sustainability.

7. Support Policy Development for Inclusive Digital Finance

Policymakers should focus on **inclusive digital finance** by promoting regulations that foster the adoption of digital financial tools in rural areas. Initiatives such as **cash incentives, tax exemptions for digital platform providers,** and **subsidized internet access** can encourage SHGs to adopt digital tools. Additionally, government programs like **Digital India** should

be scaled up with a focus on empowering SHGs through both infrastructure and training.

8. **Encourage Community-Based Digital Mentorship Models** As digital literacy is a key barrier, **peer-to-peer mentorship** can be an effective model for improving digital skills among SHG members. More digitally savvy members could act as mentors to help others in the group understand digital tools. NGOs and financial institutions could support this model by organizing **community-based digital mentorship** sessions where more experienced users can provide one-on-one assistance.

9. **Regular Monitoring and Evaluation** To ensure that the adoption of digital tools continues to benefit SHGs, it is essential to have **regular monitoring and evaluation** mechanisms in place. This could involve periodic surveys, feedback collection from

SHG members, and impact assessments to track the progress of digital adoption and its effects on group sustainability. Based on the results, modifications can be made to training programs, infrastructure, or policy frameworks.

CONCLUSION

The study highlights that the adoption of digital financial tools has significantly improved the operational efficiency, transparency, and sustainability of Self-Help Groups (SHGs) in rural Dakshina Kannada. Despite the positive impacts, challenges such as digital literacy gaps, infrastructure limitations, and cybersecurity concerns remain. To fully realize the potential of digital financial inclusion, it is essential to address these barriers through targeted digital literacy programs, improved infrastructure, and strong partnerships between SHGs, financial institutions, and government bodies. By doing so, SHGs can strengthen their business models, foster financial inclusion, and contribute to sustainable rural development.

SCOPE FOR FURTHER RESEARCH

Future studies could explore the **long-term impact** of digital financial tools on the economic outcomes of SHGs, focusing on **income generation, poverty reduction,**

and **entrepreneurial growth**. Research could also investigate the role of **gender dynamics** in the adoption of digital tools within SHGs, examining how digital financial inclusion influences **women's**

empowerment and decision-making power within these groups. Additionally, future studies could compare SHGs in other regions of India or internationally to identify **regional disparities** in digital financial adoption and uncover successful models that can be replicated. Furthermore, exploring the **effectiveness of specific digital tools**—such as mobile wallets or microfinance platforms—in improving SHG sustainability and resilience could provide deeper insights into the types of technologies most beneficial for rural financial inclusion. Lastly, examining the **policy implications** and assessing the role of government interventions in promoting **inclusive digital finance** could guide future policy recommendations for rural development initiatives.

ACKNOWLEDGMENTS

I would like to express my heartfelt gratitude to everyone who played a role in the successful completion of this research. First and foremost, I extend my sincere thanks to all the respondents who

generously shared their time and experiences.

I am deeply grateful to my research guide for his unwavering support, insightful guidance, and constructive feedback throughout the course of this project.

I also appreciate the support and camaraderie of my colleagues and peers. Their thoughtful suggestions and encouragement contributed significantly at various stages of the research.

A special thank you goes to my family for their constant encouragement, patience, and emotional support. Their belief in me helped me persevere through every challenge along the way.

This research is the outcome of the collective support, inspiration, and collaboration I received, and I remain truly thankful for all those who contributed to this journey.

REFERENCES

1. Basu, A. (2019). *Digital Financial Inclusion and its Impact on Rural Development*. Journal of Rural Development, 38(2), 217-230.
2. Chakraborty, R., & Roy, S. (2020). *Barriers to Digital Financial Inclusion in Rural India: The Role*

- of Government Policies.* Indian Journal of Economics and Development, 16(1), 45-59.
3. Nair, S. (2021). *The Digital Divide: Challenges in Rural Digital Inclusion in India.* Journal of Information Technology for Development, 27(3), 120-136.
 4. Singh, M., & Sharma, P. (2020). *Sustainability of Self-Help Groups in Rural India: The Role of Digital Financial Tools.* International Journal of Rural Management, 16(4), 302-315.
 5. World Bank. (2018). *Financial Inclusion in Rural India: Leveraging Digital Platforms for Sustainable Development.* World Bank Report.
 6. Government of India. (2019). *Digital India Programme: Empowering Rural India through Digital Inclusion.* Ministry of Electronics & Information Technology, Government of India.
 7. Venkatesh, V., & Bala, H. (2021). *Technology Acceptance in Rural India: A Study of Digital Financial Tools Adoption.* Information Systems Research, 32(4), 1134-1149.
 8. Raghunathan, K. (2018). *The Role of SHGs in Promoting Rural Entrepreneurship and Financial Inclusion.* Indian Journal of Agricultural Economics, 73(2), 162-178.
 9. Kumar, A., & Singh, R. (2020). *Impact of Digital Financial Inclusion on Women Empowerment in Rural India: A Case Study of SHGs.* International Journal of Gender Studies, 25(1), 45-59.
 10. Sahoo, R. (2022). *Digital Transformation in Rural Financial Systems: A Study of Self-Help Groups in India.* International Journal of Digital Finance, 8(2), 102-119.
 11. **Rath, A. K., & Mishra, S.** (2022). *Exploring Digital Inclusion in Rural India: Impact on Self-Help Groups and Micro-Entrepreneurs.* International Journal of Rural Management, 18(1), 45-62.
 12. **Government of India.** (2020). *National Rural Livelihoods Mission (NRLM) Report: Financial Inclusion and Empowerment of Rural Women.* Ministry of Rural Development, Government of India.
 13. **Karnataka State Rural Livelihoods Mission (KSRLM).** (2020). *Annual Report on SHGs and Financial Inclusion in Karnataka.* Karnataka State Government.

14. **Digital Empowerment**
Foundation (DEF). (2020). *Digital*
Financial Inclusion in Rural India:

Insights from SHGs. Digital
Empowerment Foundation.