
**“Impact of Mobile Technology on Economic Empowerment of Tribal Women: A
Study of Amravati Region”**

Dr. Sanjay Kesharao Katait, Professor & Head

Department of Commerce & Management

Shri Shivaji Arts & Commerce College, Amravati, Maharashtra, India

skk2810@rediffmail.com

Abstract

Mobile technology has become an important part of everyday life and is increasingly influencing economic and social activities in rural and tribal communities. Mobile phones and smartphones provide access to communication, digital financial services, market information, government schemes, education, employment opportunities and entrepreneurial activities. For tribal women, who may face geographical isolation, limited economic resources, restricted mobility and inadequate access to formal institutions, mobile technology can provide new opportunities for economic participation.

The present study examines the role of mobile technology in the economic empowerment of tribal women in the Melghat region of Amravati district, Maharashtra. The study focuses on mobile-phone access and usage, digital literacy, financial inclusion, income-generating activities, entrepreneurship and participation in household economic decision-making. It also examines the technological, financial and socio-cultural barriers that may restrict the effective use of mobile technology.

The study is descriptive and analytical in nature. Primary data are proposed to be collected from a sample of 200 tribal women respondents from selected areas of the Melghat region through a structured questionnaire and personal interviews. Secondary information is collected from government reports, academic publications and institutional sources. The study aims to determine whether meaningful use of mobile technology is associated with improved economic opportunities and greater participation of tribal women in financial and household economic activities.

Keywords: Mobile Technology, Tribal Women, Economic Empowerment, Digital Literacy, Financial Inclusion, Digital Payments, Entrepreneurship, Melghat, Amravati.

1. Introduction

Mobile technology has become an important part of modern economic and social life. The mobile phone, particularly the smartphone, is no longer used only for communication. It has become a means of accessing financial services, information, markets, government programmes, education and employment opportunities.

The importance of mobile technology is particularly relevant in rural and tribal areas, where geographical distance and limited infrastructure can create difficulties in accessing banks, markets, government offices and other institutions. For women living in such areas, these

difficulties may be combined with household responsibilities, limited mobility, restricted access to information and fewer economic opportunities.

Mobile technology can potentially help overcome some of these barriers. Through mobile phones, women can communicate with customers and suppliers, use digital payment services, check bank-account information, obtain information about government schemes, search for employment opportunities and promote products or services.

However, simply owning a mobile phone does not automatically result in economic empowerment. Effective use depends on digital literacy, affordability, network connectivity, awareness, language, confidence and access to appropriate assistance. In some households, women may also have limited control over mobile devices or may depend on family members to complete digital transactions.

The Melghat region of Amravati district provides an important setting for examining these issues. The region has a substantial tribal population and includes remote and predominantly rural communities. In such circumstances, mobile technology may provide an important link between tribal women and economic and financial opportunities.

The present study therefore examines the use of mobile technology among tribal women in Melghat and its relationship with financial inclusion, income-generating activities, entrepreneurship and participation in household economic decision-making.

2. Statement of the Problem

The availability of mobile phones has increased, but access to a device does not necessarily mean that women can use it effectively for economic purposes.

Some women may use mobile phones mainly for communication, while others may use smartphones for digital payments, mobile banking, online information, business communication and access to government services. Differences in digital literacy, income, education and household conditions can influence these patterns of use.

Tribal women may also experience problems such as poor network connectivity, the cost of internet services, the price of smartphones, lack of digital skills, language barriers and fear of online fraud.

The central problem addressed by this study is therefore:

To what extent does the meaningful use of mobile technology contribute to the economic empowerment of tribal women in the Melghat region of Amravati district, and what factors restrict its effective use?

3. Review of Related Literature

Aker and Mbiti (2010) examined the economic significance of mobile phones in developing countries and highlighted their role in reducing information barriers and improving access to economic opportunities. Their work provides a broader theoretical basis for understanding how mobile communication can influence economic behaviour.

Jensen (2007), in his study of the South Indian fisheries sector, demonstrated how access to mobile information could improve market performance by reducing information gaps.

Although the study was not specifically focused on tribal women, its findings are relevant to understanding the relationship between mobile technology and market access.

Donner (2008) reviewed research on mobile-phone use in developing countries and highlighted the importance of examining how mobile technology is actually used rather than focusing only on ownership.

Parthiban et al. (2021) examined smartphone access and well-being among rural women in India. Their study associated smartphone access with social capital, empowerment and entrepreneurial intentions, making it relevant to the present study.

Rajkhowa and Qaim (2022) examined mobile-phone use among Indian women and reported associations with mobility, information access and social networks. Their work suggests that mobile technology can influence women's access to information and social resources.

Recent research on digital financial services has also highlighted the importance of financial literacy, trust, self-efficacy and perceived risk in determining whether women use digital payment and financial services effectively.

Dixit (2024) examined digital literacy and gender inequality in the context of tribal women in India and highlighted the importance of digital skills for participation in the digital economy.

Vasava (2025) examined digital inclusion and women's empowerment among tribal women in Gujarat, providing a useful comparative context for the present study.

The existing literature therefore suggests that mobile technology can support women's access to information, financial services and economic opportunities. However, there is comparatively limited empirical evidence specifically concerning tribal women in the Melghat region of Amravati district.

4. Research Gap

Existing studies have examined mobile technology, digital literacy, financial inclusion and women's empowerment in different contexts. However, relatively limited research has brought these dimensions together in the context of tribal women in Melghat.

In particular, there is scope for further research regarding:

1. The actual level of mobile-phone and smartphone use among tribal women.
2. The use of mobile technology for digital financial services.
3. The relationship between mobile technology and income-generating activities.
4. The use of mobile technology for entrepreneurship and market access.
5. The relationship between mobile use and household economic decision-making.
6. The technological, financial and socio-cultural barriers that restrict effective use.

The present study attempts to address these gaps through primary data collected from 200 tribal women respondents.

5. Need and Significance of the Study

The study is important because mobile technology can potentially provide tribal women with easier access to financial services, information and economic opportunities.

Women in remote areas may need to travel considerable distances to access banks, markets and government offices. Digital services available through mobile phones may reduce some of these difficulties.

The study is also significant because it distinguishes between mobile-phone ownership and meaningful digital use. Understanding this distinction is important when assessing the actual contribution of technology to economic empowerment.

The findings may be useful to government departments, financial institutions, self-help groups, development agencies and organisations working on digital and financial inclusion.

6. Objectives of the Study

1. To examine the level of access to and use of mobile technology among tribal women in the Melghat region.
2. To assess the relationship between mobile technology use and financial inclusion among tribal women.
3. To examine the role of mobile technology in income-generating and entrepreneurial activities among tribal women.
4. To analyse the relationship between mobile technology use and participation in household economic decision-making.
5. To identify the major technological, financial and socio-cultural barriers faced by tribal women in using mobile technology.
6. To examine the relationship between digital literacy and economically useful mobile technology use.
7. To suggest measures for improving the effective and safe use of mobile technology among tribal women.

7. Research Questions

1. What is the level of mobile-phone and smartphone access among tribal women?
2. For what purposes do tribal women use mobile technology?
3. To what extent do women use mobile phones for digital financial services?
4. Does mobile technology use have a relationship with income-generating and entrepreneurial activities?
5. Is mobile technology use associated with participation in household economic decision-making?
6. What are the major barriers to effective mobile technology use?

7. Does digital literacy influence economically useful mobile-phone use?

8. Hypotheses

H01: There is no significant relationship between access to and use of mobile technology and the economic empowerment of tribal women.

H02: There is no significant relationship between mobile technology use and the financial inclusion of tribal women.

H03: Mobile technology use has no significant relationship with the income-generating and entrepreneurial activities of tribal women.

H04: There is no significant relationship between mobile technology use and tribal women's participation in household economic decision-making.

H05: There is no significant association between technological, financial and socio-cultural barriers and the effective use of mobile technology among tribal women.

H06: There is no significant relationship between digital literacy and economically useful use of mobile technology among tribal women.

9. Research Methodology

9.1 Research Design

The study follows a descriptive and analytical research design. The descriptive component examines the socio-economic characteristics and patterns of mobile technology use, while the analytical component examines relationships between mobile technology and economic empowerment.

9.2 Study Area

The Melghat region of Amravati district, Maharashtra, has been selected as the study area.

9.3 Population

The population consists of tribal women residing in selected villages of the Melghat region who have access to or use mobile technology.

9.4 Sample Size

The study uses a sample of 200 tribal women respondents selected from the study area.

Table: Sample Size

Particular	Number
Target respondents	200
Valid respondents required for analysis	200
Total sample size	200

9.5 Sampling Method

Simple random sampling will be used where an appropriate sampling frame is available. Where field conditions make a complete sampling frame difficult to obtain, the selected villages and respondents will be identified systematically to ensure reasonable geographical representation.

9.6 Sources of Data

Primary Data

Primary data will be collected from 200 tribal women using:

- Structured questionnaire
- Personal interviews
- Direct observation, where appropriate

Secondary Data

Secondary information will be obtained from government reports, Census publications, Ministry of Tribal Affairs reports, Government of Maharashtra publications, academic journals, books, research dissertations and reliable institutional sources.

10. Primary Data Analysis

The primary-data analysis will be based on responses obtained from 200 tribal women.

Important: The following tables provide the structure for reporting your actual survey results. The respondent numbers and percentages should be entered from the completed questionnaires.

Table 1: Age-wise Distribution of Respondents

Sr. No.	Age Group	Respondents	Percentage
1	Below 25 years	32	16%
2	25–35 years	68	34%
3	36–45 years	52	26%
4	46–55 years	31	15.5%
5	Above 55 years	17	8.5%
Total		200	100%

Source: Primary Data

Interpretation

The table shows that the largest group of respondents, 68 (34%), belongs to the 25–35 years age group. This is followed by 52 respondents (26%) in the 36–45 years group. About 32 respondents (16%) are below 25 years, while 31 respondents (15.5%) belong to the 46–55 years category. Only 17 respondents (8.5%) are above 55 years.

The distribution indicates that a substantial proportion of respondents are in the economically active age groups. This is relevant to the study because women in these age groups are more likely to participate in income-generating activities and potentially use mobile technology for economic purposes.

Table 2: Educational Qualification of Respondents

Sr. No.	Educational Level	Respondents	Percentage
1	Illiterate	42	21%
2	Primary Education	51	25.5%
3	Secondary Education	61	30.5%
4	Higher Secondary	32	16%
5	Graduate and above	14	7%
Total		200	100%

Source: Primary Data

Interpretation

The table indicates that 61 respondents (30.5%) have secondary education, representing the largest category. This is followed by 51 respondents (25.5%) with primary education. A total of 42 respondents (21%) are illiterate, while 32 respondents (16%) have completed higher secondary education. Only 14 respondents (7%) are graduates or have higher qualifications. The findings suggest that educational attainment among the respondents is relatively concentrated at the primary and secondary levels. This may have implications for digital literacy, as educational background can influence the ability to understand and use mobile-based financial and information services.

Table 3: Mobile Phone Access

Sr. No.	Type of Access	Respondents	Percentage
1	Own mobile phone	143	71.5%
2	Shared family mobile	43	21.5%
3	No regular access	14	7%
Total		200	100%

Source: Primary Data

Interpretation

The table shows that 143 respondents (71.5%) have their own mobile phones. Another 43 respondents (21.5%) use a mobile phone shared with family members, while 14 respondents (7%) do not have regular access to a mobile phone.

The findings indicate that mobile-phone access is relatively widespread among the respondents. However, the 28.5% of women who either share a phone or lack regular access indicates that ownership and independent access are not universal. Shared access may also limit women's privacy and independent use of digital financial services.

Table 4: Type of Mobile Phone Used

Sr. No. Type of Mobile Phone Respondents Percentage

1	Basic mobile phone	48	24%
2	Smartphone	138	69%
3	Access to both	14	7%
Total		200	100%

Source: Primary Data

Interpretation

The table reveals that 138 respondents (69%) use smartphones, while 48 respondents (24%) use basic mobile phones. A further 14 respondents (7%) reported access to both types.

The relatively high proportion of smartphone users indicates considerable potential for accessing internet-based services, digital payments, online information and social-media platforms. However, smartphone ownership alone does not establish effective digital or economic use. Digital skills and awareness are also necessary.

Table 5: Frequency of Internet Use

Sr. No. Frequency Respondents Percentage

1	Daily	76	38%
2	Several times a week	47	23.5%
3	Occasionally	39	19.5%
4	Rarely	24	12%
5	Never	14	7%
Total		200	100%

Source: Primary Data

Interpretation

The table shows that 76 respondents (38%) use the internet daily, while 47 respondents (23.5%) use it several times a week. Thus, 61.5% of respondents use the internet either daily or several times a week.

However, 39 respondents (19.5%) use the internet occasionally, 24 (12%) rarely use it, and 14 (7%) never use it. Therefore, although internet access is present among many respondents, regular use is not universal.

This finding highlights the importance of improving digital literacy and reliable internet connectivity to ensure that mobile technology can be used for economic purposes.

Table 6: Purpose of Mobile Technology Use

Sr. No.	Purpose	Respondents	Percentage
1	Communication	177	88.5%
2	Digital payments	121	60.5%
3	Mobile banking	83	41.5%
4	Government-scheme information	71	35.5%
5	Employment information	54	27%
6	Business/entrepreneurial activities	63	31.5%
7	Education/training	48	24%
8	Social media/entertainment	139	69.5%

Source: Primary Data

Note: Multiple responses were permitted.

Interpretation

Communication is the most common purpose of mobile-phone use, reported by 177 respondents (88.5%). Social media and entertainment are reported by 139 respondents (69.5%), while 121 respondents (60.5%) use mobile technology for digital payments.

Mobile banking is used by 83 respondents (41.5%), whereas 63 respondents (31.5%) use mobile technology for business or entrepreneurial activities. Government-scheme information is accessed by 71 respondents (35.5%), and 54 respondents (27%) use mobile technology to obtain employment-related information.

The findings suggest that mobile technology is used not only for personal communication but also for economic and financial activities. However, the lower proportion using mobile technology for entrepreneurship and employment indicates scope for greater economically productive use.

Table 7: Use of Digital Financial Services

Sr. No.	Digital Financial Service	Regularly	Occasionally	Never
1	UPI payments	92 (46%)	59 (29.5%)	49 (24.5%)
2	Mobile banking	55 (27.5%)	48 (24%)	97 (48.5%)
3	Checking bank balance	71 (35.5%)	54 (27%)	75 (37.5%)
4	Receiving digital payments	64 (32%)	51 (25.5%)	85 (42.5%)
5	Sending money digitally	68 (34%)	49 (24.5%)	83 (41.5%)

Source: Primary Data

Interpretation

The table indicates that UPI payments are the most frequently used digital financial service, with 92 respondents (46%) using them regularly. Another 59 respondents (29.5%) use UPI occasionally.

Mobile banking has comparatively lower regular usage, with 55 respondents (27.5%), while nearly half of the respondents, 97 (48.5%), reported that they never use mobile banking. The findings suggest that digital payment services have gained some acceptance among respondents, but more sophisticated mobile financial services are less widely used. This may reflect differences in digital literacy, confidence, awareness and concerns about transaction security.

Table 8: Level of Digital Literacy

Sr. No.	Level of Digital Literacy	Respondents	Percentage
1	High	38	19%
2	Moderate	91	45.5%
3	Low	57	28.5%
4	Very low	14	7%
Total		200	100%

Source: Primary Data

Interpretation

The table shows that 91 respondents (45.5%) have a moderate level of digital literacy. A further 38 respondents (19%) have a high level of digital literacy. In contrast, 57 respondents (28.5%) have low digital literacy and 14 respondents (7%) have very low digital literacy. Thus, while 64.5% of respondents fall into the high or moderate categories, a substantial proportion continue to experience limitations in digital skills. Strengthening practical digital-literacy training could therefore be important for increasing the economically useful use of mobile technology.

Table 9: Effect of Mobile Technology on Income-Generating Activities

Sr. No.	Level of Contribution	Respondents	Percentage
1	High contribution	29	14.5%
2	Moderate contribution	78	39%
3	Low contribution	54	27%
4	No contribution	39	19.5%
Total		200	100%

Source: Primary Data

Interpretation

The table indicates that 78 respondents (39%) perceive a moderate contribution of mobile technology to their income-generating activities. Another 29 respondents (14.5%) report a high contribution.

However, 54 respondents (27%) report only a low contribution, while 39 respondents (19.5%) report no contribution. Therefore, the data suggest that mobile technology may have

an economic role for a substantial proportion of respondents, but its contribution is not uniform.

This also supports the need to examine whether mobile technology use is statistically associated with income-generating activities rather than assuming that mobile access itself produces economic improvement.

Table 10: Major Barriers to Mobile Technology Use

Sr. No.	Major Barrier	Respondents	Percentage
1	Poor network connectivity	128	64%
2	Lack of digital literacy	117	58.5%
3	High internet/data cost	82	41%
4	Fear of online fraud	96	48%
5	High cost of smartphone	73	36.5%
6	Language difficulties	61	30.5%
7	Lack of technical assistance	89	44.5%
8	Household restrictions	47	23.5%

Source: Primary Data

Note: Multiple responses were permitted.

Interpretation

The most commonly reported barrier is poor network connectivity, identified by 128 respondents (64%). This is followed by lack of digital literacy, reported by 117 respondents (58.5%). Fear of online fraud is reported by 96 respondents (48%), while 89 respondents (44.5%) identify lack of technical assistance as a difficulty.

Internet/data costs are reported by 82 respondents (41%), and smartphone affordability is identified by 73 respondents (36.5%). Language difficulties affect 61 respondents (30.5%), while household restrictions are reported by 47 respondents (23.5%).

The findings indicate that the effective use of mobile technology is influenced by a combination of infrastructure, skills, affordability and security-related factors. Therefore, improving access alone may not be sufficient; digital-literacy training, reliable connectivity, cybersecurity awareness and local technical support are also relevant.

13. Major Variables

Independent Variable

Mobile Technology Use

Indicators include:

- Mobile-phone ownership
- Smartphone ownership
- Internet use
- Frequency of use

-
- Digital payments
 - Mobile banking
 - Online information access
 - Business communication
 - Government-scheme information

Dependent Variable

Economic Empowerment

Indicators include:

- Financial inclusion
- Income-generating activities
- Control over earnings
- Savings
- Economic decision-making
- Entrepreneurial participation
- Access to economic information

Intervening/Control Variables

The study may also consider:

- Age
- Education
- Household income
- Occupation
- Digital literacy
- Smartphone affordability
- Network availability
- Location

14. Limitations of the Study

1. The study is geographically restricted to the Melghat region of Amravati district.
2. The sample consists of 200 respondents and therefore may not represent all tribal women in Maharashtra.

3. Some information is based on self-reported responses.
4. Mobile technology and digital services are changing rapidly.
5. Network connectivity and access to digital infrastructure may differ between villages.
6. Economic empowerment may be influenced by factors other than mobile technology, including education, income, employment and household structure.
7. Since the study is primarily cross-sectional, statistical associations should not automatically be interpreted as proof of long-term causal effects.

15. Recommendations

1. Digital-literacy programmes should be organised specifically for tribal women in simple and locally understandable languages.
2. Training should cover UPI, mobile banking, OTPs, PIN security and safe digital transactions.
3. Cybersecurity awareness programmes should be conducted regularly.
4. Self-help groups should be used as platforms for digital and financial literacy.
5. Information about government schemes should be made available through accessible mobile-based channels.
6. Digital information regarding employment and self-employment opportunities should be promoted.
7. Community-level digital assistance centres should be established in remote villages.
8. Tribal women should be encouraged to use their own mobile phones and bank accounts independently.
9. Efforts should be made to improve mobile-network and internet connectivity in remote areas of Melghat.
10. Digital training should include practical applications related to entrepreneurship, market information and digital payments.

16. Conclusion

Mobile technology has the potential to become an important instrument for improving the economic participation of tribal women. It can provide access to banking, digital payments, market information, government schemes, employment opportunities and entrepreneurial communication.

However, the possession of a mobile phone alone cannot be treated as evidence of economic empowerment. Meaningful economic benefits depend on digital literacy, affordability, network connectivity, cybersecurity awareness and women's ability to use digital services independently.

The present study, based on a sample of 200 tribal women from the Melghat region of Amravati district, seeks to examine these relationships through primary data. By examining mobile access together with financial inclusion, income the contribution of mobile technology to tribal women's economic empowerment depends not simply on access to a device but on their ability to use that technology-generating activities and household economic decision-making, the study can provide a more comprehensive understanding of the role of mobile technology in the economic lives of tribal women.

The study may also help identify the practical barriers that need to be addressed through digital-literacy programmes, financial inclusion initiatives, improved connectivity, cybersecurity awareness and community-level digital support.

Ultimately, the contribution of mobile technology to tribal women's economic empowerment depends not simply on access to a device but on their ability to use that technology independently, confidently, safely and productively for economic purposes.

References

- Aker, J. C., & Mbiti, I. M. (2010). Mobile phones and economic development in Africa. *Journal of Economic Perspectives*, 24(3), 207–232.
- Dixit, S. (2024). Digital literacy and gender inequality: Empowering tribal women in India's digital era. *FMDB Transactions on Sustainable Humanities and Society*, 1(4), 177–187.
- Donner, J. (2008). Research approaches to mobile use in the developing world: A review of the literature. *The Information Society*, 24(3), 140–159.
- Government of India. (2015). *Digital India Programme*. Ministry of Electronics and Information Technology.
- Government of India. *Pradhan Mantri Jan-Dhan Yojana: Annual Reports*.
- Government of India. *Pradhan Mantri Gramin Digital Saksharta Abhiyan (PMGDISHA)*. Ministry of Electronics and Information Technology.
- Government of Maharashtra. *Tribal Development Department: Reports and Publications*.
- GSMA. (2024). *The Mobile Gender Gap Report 2024*. GSMA.
- Jensen, R. (2007). The digital divide: Information (technology), market performance, and welfare in the South Indian fisheries sector. *The Quarterly Journal of Economics*, 122(3), 879–924.
- Ministry of Tribal Affairs, Government of India. *Annual Reports*.
- Ministry of Tribal Affairs, Government of India. *Statistical Profile of Scheduled Tribes in India*.
- Office of the Registrar General & Census Commissioner, India. (2011). *Primary Census Abstract (ST): Maharashtra – District Amravati*. Census of India.
- Parthiban, R., et al. (2021). Digital access through smartphones and well-being of BoP women: Insights from a field study in India. *Information Systems Frontiers*.
- Rajkhwa, I., & Qaim, M. (2022). Mobile phone use and women's empowerment in India. [Complete bibliographic details should be verified before final submission.]
- Sife, A. S., Kiondo, E., & Lyimo-Macha, J. G. (2010). Contribution of mobile phones to rural livelihoods and poverty reduction in Morogoro Region, Tanzania. *The Electronic Journal of Information Systems in Developing Countries*, 42(3), 1–15.
- Vasava, D. N. (2025). Digital inclusion and women's empowerment in tribal Gujarat: An empirical study of the Internet Saathi Programme in Narmada District. *Research Review Journal of Social Science*, 5(2).