

Empowering Rural Women Through Technical Communication: A Study in Coimbatore Remote Region

DR.A. Bhuvaneswari¹, DR.M.E. Pavithra², Ms. K. Revathi³

¹Professor of Sociology, KMCH Institute of Health Sciences.

²Associate Professor of Microbiology, KMCH Institute of Health Sciences.

³Assistant Professor of Psychology, KMCH Institute of Health Sciences.

ABSTRACT

This study investigates the impact of technical communication on women residing in the most remote areas of Coimbatore. Technical communication has proven to be a transformative force fostering accessibility, inclusion, and empowerment among marginalized populations. For rural women, it facilitates the acquisition of knowledge, skill development, and meaningful participation in resource management and community decision-making. Communication technologies have significantly influenced societal progress, particularly by opening new avenues for women's autonomy, confidence, and social engagement.

In this context, technology encompasses devices capable of electronically sharing or storing information like mobile phones, data storage systems, online banking, WhatsApp business and basic e-governance service. Despite its potential, many rural women experience limitations in technical communication due to low digital literacy and language barriers.

To explore these challenges, data was collected through structured questionnaires focusing on, assessing rural women's socio-economic, academic backgrounds, knowledge on technical communication and impact of technical communication training on empowerment indicators like income, confidence and decision making at Annur block in Coimbatore district. Percentage analysis revealed a high prevalence of digital illiteracy, with the dominance of national language identified as a significant barrier. The findings underscore the training of technical communication and incorporating Tamil as a language in digital communication as a strategic measure to enhance digital literacy and facilitate broader technological engagement among rural women.

Keywords: Rural women, Technical communication, digital literacy and transformation.

I.INTRODUCTION

Progress is not merely defined by numerical achievements—it is forged through challenging societal norms and transforming regressive structures. In India, women and the rapid advancement of technology are central forces reshaping traditional perspectives and driving inclusive social evolution. Technical communication plays a critical role in this transformation. It unlocks opportunities for innovation across various sectors including social, economical, educational, agriculture and healthcare information. Despite their limited representation in science and technology fields, women are increasingly leveraging technical communication to improve their lives—regardless of whether they live in metropolitan cities, urban hubs,

towns, or rural areas.

As digital platforms and devices become more widespread, women are experiencing a shift in social, political, and economic roles. In a male-dominated culture, their rising participation is a powerful sign of empowerment. Technical communication aids in capacity building and helps narrow the gender gap in the workforce. The World Summit on the Information Society (WSIS) stressed creating inclusive technical policies—such as those focused on e-health, e-employment, and cultural identity preservation—while also tracking gender-specific progress.

Despite representing nearly half the population, women in India account for just 29% of the workforce (International Labor Organization, 2014). Barriers such as low education levels and persistent gender biases hinder their full participation. Nevertheless, internet usage has soared—particularly in rural regions—where technical communication initiatives are beginning to bridge the gap.

As of May 2022, The National Family Health Survey (NFHS) 2019-21 reported that 33.3% of women in the 15-49-year age group in India had used the internet. In 2024, the gender gap in internet usage is narrowing, with women representing 47% of users nationwide. 51.8% of urban women in the 15-49 age group have used the internet, according to the National Family Health Survey (NFHS-5) for 2019-21. Only 24.6% of rural women in the 15-49 age group have used the internet. This disparity is attributed to a "triple divide" - digital, gender, and rural (Asian Development Bank and LinkedIn). Since technical communication in English was a barrier, societal factors continue to restrict women's access to technology in social, economical, educational, agriculture and healthcare.

To address these disparities, numerous organizations are actively working to strengthen women's digital presence. A notable example is "The Internet Saathi program" launched by Google and Tata Trusts, which aims to improve digital literacy among rural women. Similarly, government initiatives like "Pradhan Mantri Gramin Digital Saksharta Abhiyan (PMGDISHA)" aim to provide basic digital literacy training to rural households, including women and girls. Still, gender gaps remain: in rural areas, only 34% of women use the internet compared to 55% of men, because technical knowledge is a hurdle.

II. REVIEW OF LITERATURE:

Bayram, A. T., Bayram, G. E., and Ateş, Ö. (2025). "Digital tools' effects on rural women's economic empowerment" This chapter explores how digital tools have revolutionized rural women's economic empowerment, emphasizing how Digital financial services, mobile phones, and internet access improve women's access to essential resources like markets, information, and financial services. Secure transactions have been made possible by mobile technology, especially mobile banking and money services, giving women the freedom to save, borrow, and invest on their own. Additionally, digital channels help rural women participate in cooperative groups by facilitating continuous networking and skill development. Notwithstanding these developments, issues including poor infrastructure, cultural obstacles, and low levels of digital literacy still exist and call for focused legislative actions to promote equitable digital empowerment.

Bokpin, G. A., and Agyemang, E. F. (2024). "Economic empowerment of women through digitalization: examining time preferences, risk, and social networks." The effect of digital financial services (DFS) on women's economic empowerment (WEE) is examined in this study. Against the backdrop of Africa being a hotbed for technological innovation, in Accra, Ghana. Despite advancements, Africa still faces issues that have a major impact on women's economic empowerment, such as limited access to DFS and digital illiteracy. The study emphasizes how crucial affordability and digital literacy are to the success of DFS

programs for women, which is consistent with sustainable development goals that support women's economic empowerment and the reduction of poverty.

Chinnadurai, A. S., and Debbarma, A. (2023). "Empowering women in Tripura through access to ICT and digital literacy." The study investigates how information and Communication technology (ICT) and digital literacy can revolutionize women's independence in Tripura. Emphasising digital literacy as more than mere technical Competence, the discussion navigates through the multifaceted skills required for meaningful engagement in a digitally connected world. The paper underscores that empowering women through digital literacy and ICT is a catalyst for societal transformation. By breaking barriers, fostering inclusive opportunities, and enhancing capabilities, it advocates for a more equitable and progressive environment where women play pivotal roles in driving socio-economic growth and creating resilient communities in Tripura.

Entrepreneurship development of rural women through digital inclusion: examining the contributions of public programs," Yadav, Paliwal, and Chatradhi N. (2022) This research details the efforts and advancements made by rural communities' digital inclusion. Indian ladies. The article evaluates the components of strategic interventions necessary to achieve women's empowerment and social development through digital inclusion using a thorough literature review and a case-based methodology. Focus group discussions with the leaders and women entrepreneurs reveal that this unique form of digital entrepreneurship has enormous capacities to support rural women entrepreneurship development and also to pave the way toward women empowerment.

The potential of ICT for rural development is recognized, but little is known about how it particularly impacts Keralan women employed in agriculture. Previous research on the topic has not gone far enough in elucidating how mobile technology could assist in reducing the gender gap, expanding access to agricultural resources, and promoting sustainable farming practices. According to Gupta and Agrawal (2024), this study aims to bridge that gap by demonstrating how mobile technology can enhance farming production, expand market possibilities, and foster socioeconomic empowerment for rural women in Kerala.

III. ABOUT THE STUDY:

Despite sustained global efforts, women and girls continue to face substantial barriers in accessing economic opportunities, education, healthcare, and social services. Yet, in developing nations, women engage in a broad spectrum of social, economic, and health-related activities across both formal and informal sectors. Technical communication holds immense potential to boost women's participation in domains such as trade, governance, education, health, crafts, and employment. By simplifying complex information and offering accessible tools, it enables women especially in rural and urban settings to make informed decisions and improve their livelihoods.

This study highlights the urgent need to develop technical communication resources in regional language, including user manual, mobile usage, online banking, WhatsApp business and basic e-governance service. Delivering these materials in regional language can play a transformative role in empowering rural women by bridging information gaps and amplifying their voices within society.

IV. OBJECTIVES OF THE STUDY:

1. To assess the rural women's socio-economic, and academic backgrounds.
2. To identify the existing level of technical communication knowledge among rural women.

3. To evaluate the impact of technical communication training on empowerment indicators (income, confidence, decision-making).

V. METHODOLOGY:

For this study, a descriptive survey design was found to be most suitable, as the objective was to analyze and identify the level of knowledge regarding technical communication among women in remote villages. The research was conducted at Annur block in Coimbatore district, which comprises 21 panchayat villages. Among these, Kuppepalayam, Karegoundenpalayam, and Kariampalayam grama panchayat were purposively selected for the study. According to the 2011 census, Karegoundenpalayam panchayat has a total population of 7,531, with 3,796 males and 3,735 females. Of the female population, 2,299 are educated. Kuppepalayam panchayat has 2,784 residents, comprising 1,424 males and 1,360 females, of which 706 females are educated. Kariampalayam panchayat has approximately 4,498 people, with 2,264 males and 2,234 females. Among the female population, 1,244 are educated. Using a purposive sampling technique, 100 female respondents were selected between the age 18-45 from self-help groups, tailoring units and agriculture labor communities across the three grama panchayats for the study. A structured questionnaire (demographics, technical knowledge, communication channels used), Focus group discussions (for qualitative insights on barriers and empowerment experiences), observation checklist (for training sessions effectiveness) were employed for data collection, and the findings were analyzed using descriptive statistical methods, including frequency distributions, percentages, and mean scores.

VI. RESULTS AND DISCUSSION:

In regard with Socio-economic and Educational Background, majority of the participants (74%) belonged to agricultural families, with an average monthly income below ₹11,000. In terms of education, 48% had completed SSLC, 32% were educated up to higher secondary level and the remaining respondents had no formal education. In aspect of Pre-Training Status, Technical Communication Knowledge Before the training: - 59% of respondents used mobile phones only for voice calls, 15% were aware of online payment options but were hesitant to use them, 83% relied on family members for accessing online services. Pertaining to Barriers Identified like, Key challenges in adopting digital communication such as fear of misuse of technology, lack of formal digital training, language barriers, online platforms and poor network connectivity in certain hamlets. In relation with Post-Training Impact and Following the intervention, 85% of respondents were able to independently send and receive WhatsApp messages, 65% learned to check their bank balances via mobile, 56% showed confidence in paying utility bills online. Respondents reported enhanced self-confidence and reduced reliance on others for routine digital transactions. Qualitative Insights like Participants expressed a sense of empowerment, particularly in communicating directly with customers for home-based businesses. Some women-initiated WhatsApp groups to facilitate sales of SHG (Self-Help Group) products. Additionally, many expressed the need for continued mentorship, Tamil language as mobile banking app and support to further develop their digital skills will enhance the technical communication literacy.

VII. CONCLUSION AND RECOMMENDATIONS:

The study highlighted that technical communication training played a transformative role in empowering rural women by improving their functional digital literacy, boosting self-confidence, and enhancing their

participation in economic activities. However, to ensure sustained impact, it is essential to provide consistent follow-up training, integrate Tamil language support into banking applications, and improve digital infrastructure in underserved areas.

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