Assessment of Digital Literacy among Women Sarpanches in Rural Punjab

Gopal Singh Bohra[1], Sansar Singh Janjua[2]

[1]*Research Scholar, Desh Bhagat University*

[2]*Professor, Department of Public Administration, Desh Bhagat University*

I. INTRODUCTION

In the era of Digitalization, we can now easily interact from one corner of the world to other corner within a second by browsing the mobile applications such as WhatsApp, True caller, Facebook, Instagram etc. Access of information about various governmental schemes from sitting at our home, has becomes reality today. Internet facility has outdated sending of physical communication such as personal and official letters/telegrams. This all has become possible only because of digital literacy.

As per Government of India, Ministry of Labour and Employment, Digital literacy is the ability of individuals and communities to understand and use digital technologies for meaningful actions with life situations. Simply, digital literacy refers to access of computer/smart phone/internet and various application for our day to day activities. In recent years, the Indian government has made significant efforts to digitize public services and governance processes, including initiatives such as *Digital India*. These efforts aim to promote transparency, efficiency, and inclusiveness in governance. However, the success of digital governance largely depends on the digital literacy of grassroots leaders, especially in rural areas.

In the past few decades India has seen incredible progression in various technology driven sectors such as unified payment Interface (UPI) and Aadhar linked various scheme The pandemic of 2019 has accelerated the digital transformation of industries, creating huge opportunities for all organizations around the globe. . Market forces are also credited to bring digital literacy in order to expand the land scape their business. life. https://labour.gov.in/organizationsofmole/dattopant-thengadi-national-board-workers-education-and-developmentdtnbwed

India's push toward digital governance through schemes such as Digital India, eGramSwaraj, and Common Services Centre's (CSCs) aims to bring transparency and efficiency to rural administration. The 73rd Constitutional Amendment Act mandating one third reservation for women in Panchayati Raj Institution has created opportunities for inclusive governance. This resulted to a significant rise in female political representation at the grassroots level. However, women sarpanches in rural area often struggle with low levels of digital literacy. The ability to access and utilize digital tools are seen as essential for effective rural governance. From accessing government schemes and maintaining digital records, ensuring timely disbursement of funds and communicating with district authorities through various digital applications has enhances governance capacity of rural Sarpanches.

Digital literacy in Punjab's village Panchayat is still developing with initiatives like Pradhan Mantri Gramin Digital Saksharta Abhiyan (PMGDSHA) aiming to improve digital literacy in rural households. There are numbers of digital platforms in Panchayat Raj System to enhance transparency, efficiency and citizen engagement. Key platform include eGramSwaraj, Audit Online, and Meri Panchayat App. These platforms enable online accounting, planning, progress tracking and citizen interaction, transforming how Panchayats operates.

Women sarpanches (elected heads of village panchayats) play a crucial role in rural governance and local development. In Punjab, women's participation in local governance has increased due to constitutional provisions like the 73rd Amendment, which mandates reservation for women in Panchayati Raj Institutions (PRIs). Despite their increased presence, a major challenge persists—many of these women lack the

necessary digital skills to effectively leverage digital tools for governance and service delivery.

This research aims to assess the level of digital literacy among women sarpanch in rural Punjab, identify key barriers to digital inclusion, and recommend strategies to enhance their digital capabilities. Understanding the digital literacy landscape among these women leaders is critical for strengthening rural governance and promoting gender equity in digital empowerment.

II. LITERATURE REVIEW

The concept of e-governance emphasizes the use of information and communication technologies (ICT) to improve the delivery of government services. Several studies (Bansal, 2020; Sharma & Raj, 2021) argue that digital literacy among rural leaders directly correlates with improved governance outcomes. Studies like Sharma (2019) and Kumar & Rani (2020) highlight that rural India continues to face a significant digital divide, with women disproportionately affected due to socio-cultural barriers, limited access to digital infrastructure, and lower educational attainment. Furthermore, research by Mishra (2021) found that even when women occupy leadership positions, such as sarpanches, their decision-making power and digital engagement often remain limited due to patriarchal structures and lack of training. If efforts made to bring digital literacy in rural masses this will prove a boon to transform the capacity of grass root level leader and also bring transparency and efficiency of the village sarpanches. However, barriers such as socio-cultural constraints, lack of infrastructure, and inadequate training often hinder the adoption of digital tools by women sarpanch.

In Punjab, while rural connectivity has improved, there is limited empirical data on how women sarpanches interact with digital governance platforms such as e-panchayat portals, mobile apps for service delivery, and social media for community engagement. Few localized studies (e.g., Singh & Kaur, 2022) suggest that digital literacy among women leaders remains uneven and often symbolic, with male family members mediating digital access. Research by the Ministry of Panchayati Raj (2023) reveals that only a fraction of elected women representatives is proficient in using digital platform like e Gram Swaraj. The government should take initiative to issue smart phone with internet connectivity to women sarpanch to encourage and empower them to join the main stream of digital literacy. Further more, NGOs and training institutes lay a limited role in capacity building. Disparities on access of digital resources, opportunities and power between different genders has also adversely affected the leadership potential of women sarpanches.

III. METHODOLOGY

3.1   **Research Design: -** This study adopts a descriptive survey research design aimed at assessing the current level of digital literacy among women sarpanch in rural Punjab. The research focuses on identifying usage patterns, barriers, and the impact of digital literacy on local governance effectiveness.

3.2   **Population and Sampling**

(a)   **Population**: All elected women sarpanches (village heads) residing in rural areas of Punjab.

(b)   **Sample Size**: 40 women Sarpanch.

(c)   **Sampling Technique**: Purposive sampling was used to select respondents based on their role as elected sarpanches in gram panchayats. Districts were selected to ensure regional representation.

(d)   **Data Collection Tool:** Data was collected using a structured questionnaire including following sections:

- Demographic profile
- Access to digital devices
- Digital skills and competencies
- Awareness and use of digital platforms
- Barriers to digital engagement
- Digital training experiences
- Open-ended responses for qualitative insights
- The questionnaire was administered in Punjabi and English, depending on the preference of the respondents.

(e)   **Data Collection Procedure:** The data was collected through **in-person visits**, phone interviews. Informed consent was obtained from each participant, and responses were recorded confidentially.

(f) **Ethical Considerations**
- Participants were informed about the purpose and voluntary nature of the study.
- Anonymity and confidentiality were maintained.

IV. RESULT

Out of 50 respondents, 42% were between 31–40 years of age, and 35% had completed secondary education. Majority belonged to the SC category (58%), with representation from **seven districts**. 85% of respondents owned smartphones, but only 27% had access to Wi-Fi. Internet access remained inconsistent in districts like Mansa and Ferozepur. While 78% were able to use WhatsApp independently, fewer than 1 in 5 could access or navigate government digital portals on their own **(Table 1).** This data shows a significant gap between awareness and actual usage, especially for tools critical to governance **(Table 2).** Only 18% of respondents had received any formal digital literacy training. Among them, 67% reported feeling confident in using at least one digital governance platform. **Table 3** shows Lack of structured training and poor connectivity emerged as the most cited barriers to digital adoption. Younger sarpanch (below 40 years) had better digital skills and able to use Laptop and Tablets. Most of women sarpanch have shown interest for digital literacy training. Digitally literate sarpanch performed better in fund tracking and speedy grievance redressal. They were more confident in attending virtual district meetings, using government portals and coordinating village schemes. In contrast, digitally illiterate sarpanch often depended on male relatives or clerks, reducing their autonomy.

V. DISCUSSION

The findings of this study provides valuable insights into the current status of digital literacy among women sarpanches in rural Punjab. The data suggests that while ownership of digital devices—especially smartphones—is relatively high, actual usage of governance-related digital tools remains low. Most respondents use devices primarily for basic communication (e.g., WhatsApp, calls) but lack the skills or confidence to navigate more complex digital platforms such as e-Panchayat, UMANG, or Digi Locker.

One of the most significant challenges identified was the lack of formal digital training. Most of the respondents either unaware of such programs or having never participated in one. Even when training was provided, it is not given in local language. socio-cultural factors, such as dependence on male family members or limited decision-making freedom in households, further hinder the digital autonomy of these women leaders.

Table 1- Digital skills assessment	
TASK	**% ABLE TO DO INDEPENDENTLY**
Use WhatsApp	78%
Use email	22%
Attend video meetings	15%
Access e-Governance portals	18%

Table 2- Awareness and Use of Digital Platforms		
Platform	**Awareness %**	**Usage %**
Digi Locker	62 %	20 %
UMANG app	50 %	12 %
e-Panchayat Portal	70 %	24 %

Table 3- Barriers to Digital Literacy	
Barrier	**% Respondents**
Lack of training	72 %
Poor internet connectivity	65 %
Language difficulty	58 %
Family/ social restrictions	40 %

The analysis also reveals a strong correlation between educational background and digital proficiency. Women with at least secondary education were more likely to engage with digital platforms meaningfully. Age was also a determining factor, with younger sarpanches showing higher confidence in using digital tools. These results align with broader national findings from the Digital India mission and studies on digital inclusion gaps in rural governance.

While government efforts under schemes like Digital India aim to promote rural digital empowerment, the gendered digital divide remains a pressing issue. Empowering women sarpanch with digital skills is critical not only for improving governance efficiency but also for enhancing their leadership, autonomy, and credibility within their communities.

The study confirms that digital literacy significantly enhances the governance capabilities of women sarpanch. It improves efficiency, transparency and community engagement while reducing dependency on intermediaries. It also confirms that the women especially those with higher age group does not know how and also the excess to the smart phones, laptop and computer. Therefore, digital literacy remains a major challenge particularly in states with low female literacy and entrenched patriarchal structures. Furthermore, digital literacy must go beyond basic smartphone usage to include the ability to navigate government portals, interpret data and make informed decisions. Training programs must be a continuous process. Though the government has initiated number of project and programs in this direction but the execution of these project and program at grass root level is still a day dream only.

VI. SUCCESS STORIES

Punjab is the first state in the country to initiate digital mapping of all 12000 plus villages in the state. In Bathinda District some women sarpanches have created WhatsApp group to communicate directly with villagers to get their suggestion and feedback in any village issues and also to update them regarding ongoing village development works to include fund released and utilized. This initiative has been appreciated by villagers.

VII. RECOMMENDATIONS

Based on the findings and challenges identified in this study, the following actionable recommendations are proposed:

7.1 Tailored Digital Literacy Programs
- Develop and deliver local-language digital literacy workshops (Punjabi-based) focused on governance tools (e.g., e-Panchayat, UMANG).
- Use hands-on and peer-learning approaches rather than one-time theoretical sessions.

7.2 Village-Level Digital Resource Centers
- Establish Digital Sewa Kendra's or Community Learning Hubs within panchayat offices.
- Equip them with internet access, tablets, and trained facilitators to support women sarpanch regularly.

7.3 Mobile-Based Learning Modules
- Create mobile-friendly training apps or WhatsApp-based micro learning modules designed for elected women representatives (EWRs).

7.4 Gender-Sensitive ICT Policies
- Frame policies that recognize the unique digital barriers faced by women, including cultural restrictions and lack of time.
- Ensure family members and male panchayat peers are engaged in sensitization sessions to reduce resistance.

7.5 Mentorship Networks
- Set up a state-level mentorship program linking digitally skilled sarpanches with those needing support.
- Encourage cross-learning between districts (e.g., digital ambassadors among EWRs).

7.6 Regular Evaluation and Follow-Up
- Monitor digital literacy improvements through annual assessments.
- Integrate feedback loops into training programs for continuous refinement.

VIII.   POLICY IMPLICATIONS

The study reveals that digital exclusion among elected women leaders can undermine the effectiveness of rural e-governance. Therefore, policy efforts must:

8.1   Align Digital   India and Mission Antyodaya goals   with gender-focused   training initiatives.

8.2   Encourage state-level rural development and Panchayati raj departments to institutionalize

digital onboarding for all newly elected sarpanch, especially women.

8.3   Consider mandatory digital readiness modules in the induction of elected panchayat

officials.

IX.   CONCLUSION

This study concludes that digital literacy among women sarpanch in rural Punjab is limited to particularly among younger and more educated leaders. The gap between device ownership and effective digital engagement highlights a need for targeted intervention.

Digital literacy acts as a catalyst in bridging the gap between nominal political participation and substantive governance by women sarpanch in rural India. Ensuring digital inclusion is not just a technological imperative but a democratic one. By enhancing the digital capabilities of women sarpanch, we not only strengthen the democratic fabric at the grassroots but also support the broader goals of gender equality, transparent governance, and inclusive development.

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