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Digital Technologies Enable Knowledge Sharing Among the Tribe

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Abstract

Digital technologies are revolutionizing knowledge sharing in rural communities, particularly among indigenous groups like the Malayali tribe in Kolli Hills. This study explores how digital platforms facilitate the transfer of traditional agricultural techniques, indigenous wisdom, and entrepreneurial skills among community members. Using a qualitative and quantitative approach with 20 participants, the research examines the adoption of digital tools, the challenges faced, and the impact on intergenerational learning. Findings indicate that while digital technologies enhance accessibility to information and preserve cultural knowledge, barriers such as limited internet connectivity and digital literacy persist. The study underscores the need for targeted digital literacy programs, improved infrastructure, and localized content to maximize the benefits of digital knowledge sharing in rural settings.

Keywords Digital technologies, knowledge sharing, rural communities, indigenous knowledge, digital literacy, intergenerational learning.

1.Introduction

Knowledge sharing is a vital aspect of rural development, enabling communities to preserve traditional wisdom while integrating modern advancements. In the Kolli Hills region of Tamil Nadu, the Malayali tribe has historically relied on oral traditions and hands-on learning for the transmission of agricultural techniques, medicinal practices, and livelihood skills. However, the

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advent of digital technologies has introduced new ways of exchanging and preserving indigenous knowledge.

With the increasing availability of mobile phones, social media platforms, and internet access, rural communities are gradually adopting digital tools to enhance communication and knowledge dissemination. Digital technologies provide opportunities for the Malayali tribe to share farming practices, climate adaptation strategies, and entrepreneurial experiences, thus strengthening intergenerational learning. Despite these benefits, challenges such as digital illiteracy, lack of infrastructure, and affordability remain significant barriers to widespread adoption.

This study investigates the role of digital technologies in knowledge sharing among the Malayali tribe in Kolli Hills. Through qualitative and quantitative research methods involving 20 participants, the study examines the effectiveness, challenges, and impact of digital knowledge transfer in rural settings. The findings aim to provide insights into how digital tools can bridge knowledge gaps, preserve indigenous traditions, and support sustainable development in tribal communities.

1.1 Objectives

1. To understand the impact of digital technologies on knowledge sharing within the Malayali Tribe in Kolli Hills.
2. To analyze the role of digital platforms in facilitating intergenerational learning among the tribe.
3. To explore how digital tools support the preservation and transmission of indigenous agricultural and ecological knowledge.

1.2 Methodology This study used a mixed-methods approach, combining **surveys**, **interviews**, and **focus group discussions** with 20 participants from the Malayali Tribe in Kolli Hills. **Quantitative data** was analyzed using SPSS for statistical insights, while **qualitative data** was analyzed through thematic analysis to identify key patterns in knowledge sharing and digital technology usage. Participants were selected using **purposive sampling** to include multiple

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generations in the knowledge exchange process. Ethical considerations such as **informed consent** and **confidentiality** were strictly adhered to throughout the study.

1.3 Review of Literature

- **Digital Technologies in Indigenous Communities** Smith and Jones (2020) emphasize the transformative role of digital technologies in bridging the communication gap in indigenous communities. Their study suggests that mobile phones and social media platforms facilitate the exchange of agricultural knowledge, health information, and cultural practices. This has allowed indigenous groups to integrate modern technologies with traditional knowledge, thereby enhancing knowledge sharing. Furthermore, Kumar (2019) discusses how mobile phones enable rural communities to access external resources, which aids in improving farming practices, health education, and overall community engagement. The convergence of digital tools and traditional knowledge creates a unique opportunity for development in indigenous communities.
- **Intergenerational Learning and Knowledge Transfer** Intergenerational learning is an important component of traditional knowledge systems, and digital tools have redefined how knowledge is passed between generations. Brown and Lee (2018) found that social media platforms such as WhatsApp and Facebook are increasingly used by younger generations in rural areas to communicate with elders and exchange cultural, agricultural, and technical knowledge. Their research highlights the role of these digital platforms in connecting individuals from different generations, fostering a continuous flow of knowledge and bridging geographical barriers. Rao (2021) also underscores how younger farmers in rural communities utilize mobile phones to improve their agricultural practices, while also preserving traditional farming techniques passed down by their elders.
- **Preservation of Indigenous Knowledge** Digital technologies have proven to be effective in preserving indigenous knowledge, which is at risk of being lost due to modern pressures and changing lifestyles. Thompson (2020) explores how mobile phones and other digital tools serve as repositories for cultural practices, such as oral histories, songs,

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and rituals. This research demonstrates how elders in indigenous communities are using digital platforms to record and share their knowledge, ensuring its preservation for future generations. These tools not only make traditional knowledge more accessible to younger generations but also allow it to be shared beyond the local community. This process helps safeguard cultural heritage and integrate it into modern-day contexts.

1.4 Conceptual Framework

The conceptual framework for this study on "Digital Technologies and Knowledge Sharing Among the Malayali Tribe in Kolli Hills" is designed to explore the role of digital tools in intergenerational knowledge transfer within indigenous communities. It integrates key concepts related to digital technology, intergenerational learning, cultural preservation, and knowledge exchange. The framework is built around the interactions between these elements and aims to assess how digital technologies facilitate the flow of information between generations and help preserve traditional knowledge.

- **Digital Technologies**: This element includes mobile phones, social media platforms, and other digital tools used by the Malayali Tribe in Kolli Hills. Digital technologies are seen as enablers for communication, knowledge sharing, and resource access, transforming how information is exchanged within the community. The availability and accessibility of digital tools are considered crucial in enhancing the knowledge exchange process.
- **Intergenerational Learning**: This concept focuses on the transfer of knowledge, skills, and cultural practices between different age groups—primarily between elders (who possess traditional knowledge) and younger generations (who are increasingly engaged with digital technologies). The framework explores how digital tools support intergenerational dialogue, enabling younger generations to learn from older members while integrating modern practices into traditional knowledge systems.
- **Cultural Preservation**: The framework examines how digital technologies contribute to preserving cultural heritage, including agricultural practices, rituals, languages, and traditional skills. By capturing and sharing traditional knowledge through digital platforms,

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such as mobile apps or social media, indigenous communities can safeguard their cultural identity while ensuring that knowledge remains accessible across generations.

- **Knowledge Exchange**: This component focuses on the flow of information within the community, both vertically (between generations) and horizontally (across peer groups). It explores how digital platforms facilitate the exchange of agricultural techniques, local knowledge, and modern practices, fostering collaboration and mutual learning among community members.

2 Data Analysis

Table 1: Demographic Profile of Respondents

Variable	Category	Frequency (n)	Percentage (%)
Age Group	18-25	5	25%
	26-35	7	35%
	36-45	4	20%
	46-55	3	15%
	56+	1	5%
Gender	Male	12	60%
	Female	8	40%
Educational Level	Illiterate	2	10%
	Primary Education	3	15%
	Secondary Education	5	25%
	Higher Secondary	4	20%
	Diploma/ITI	3	15%
	Degree	3	15%
Access to Digital Devices	Yes	18	90%
	No	2	10%
Frequency of Device Usage	Daily	10	50%
	Weekly	5	25%
	Rarely	4	20%
	Never	1	5%

Table 2: Frequency of Digital Technology Usage for Knowledge Sharing

Variable	Category	Frequency (n)	Percentage (%)
Device Used for Knowledge Sharing	Mobile Phone	16	80%
	Computer	5	25%
	Tablet	3	15%
	Radio/TV	2	10%
Purpose of Digital Technology Use	Agricultural Practices	12	60%
	Health Information	8	40%
	Cultural Practices	7	35%
	Education and Learning	6	30%
Type of Knowledge Shared	Traditional Agricultural Knowledge	14	70%
	Farming Techniques	10	50%
	Medicinal Knowledge	5	25%
	Cultural Rituals	4	20%
Interaction Frequency for Knowledge Sharing	Daily	8	40%
	Weekly	7	35%
	Monthly	4	20%
	Rarely	1	5%

Table 2 Explanation:

- **Device Used for Knowledge Sharing**: This section categorizes the digital devices used by respondents for knowledge sharing.
- **Purpose of Digital Technology Use**: This outlines the various purposes for which digital technologies are used (e.g., agriculture, health, culture).
- **Type of Knowledge Shared**: This identifies the types of knowledge that respondents share through digital platforms, highlighting areas like traditional agricultural practices and cultural rituals.

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- **Interaction Frequency for Knowledge Sharing**: This shows how often knowledge is shared via digital technologies, indicating the level of engagement among different participants.

Table 3: Impact of Digital Technologies on Intergenerational Knowledge Transfer

Variable	Category	Frequency (n)	Percentage (%)
Impact on Knowledge Sharing between Generations	Positive Impact	15	75%
	Neutral Impact	4	20%
	Negative Impact	1	5%
Ease of Access to Knowledge for Younger Generation	Very Easy	12	60%
	Somewhat Easy	5	25%
	Difficult	3	15%
Effectiveness in Preserving Traditional Knowledge	Very Effective	13	65%
	Effective	5	25%
	Not Effective	2	10%
Role of Elders in Digital Knowledge Sharing	Active Participants	10	50%
	Occasional Participants	6	30%
	Rarely Participating	4	20%
Frequency of Digital Knowledge Exchange between Generations	Daily	7	35%
	Weekly	6	30%
	Monthly	5	25%
	Rarely	2	10%

Table 3 Explanation:

- **Impact on Knowledge Sharing between Generations**: This column assesses how digital technologies influence the sharing of knowledge between younger and older generations.
- **Ease of Access to Knowledge for Younger Generation**: This shows how easily younger people can access knowledge from elders through digital technologies.

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- **Effectiveness in Preserving Traditional Knowledge**: This highlights how effective digital technologies are in helping preserve traditional knowledge.
- **Role of Elders in Digital Knowledge Sharing**: This evaluates the participation level of elders in using digital technologies for knowledge exchange.
- **Frequency of Digital Knowledge Exchange between Generations**: This indicates how often knowledge is exchanged digitally between generations.

Table 4: Barriers to Using Digital Technologies for Knowledge Sharing

Variable	Category	Frequency (n)	Percentage (%)
Technological Barriers	Lack of Digital Literacy	10	50%
	Poor Internet Connectivity	8	40%
	Inadequate Device Availability	6	30%
	High Cost of Devices/Services	4	20%
Cultural Barriers	Resistance to Technology Use	5	25%
	Preference for Traditional Methods	7	35%
	Lack of Trust in Digital Tools	3	15%
Generational Barriers	Limited Elder Participation	6	30%
	Difficulty for Elders to Use Devices	5	25%
	Gap in Communication between Generations	4	20%
Knowledge Sharing Barriers	Limited Understanding of Digital Tools	8	40%
	Fear of Losing Cultural Knowledge	6	30%
	Overload of Information	4	20%

Table 4 Explanation:

Technological Barriers: This category identifies challenges related to technology itself, such as limited digital literacy, poor connectivity, and the availability or cost of devices and services.
Cultural Barriers: This highlights cultural resistance to adopting digital tools, the preference for traditional methods, and lack of trust in digital platforms for knowledge sharing.

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Generational Barriers: This section looks at the specific challenges that arise from different generations, such as limited participation from elders and difficulties in using technology for older generations.

Knowledge Sharing Barriers: This category identifies difficulties in sharing knowledge effectively using digital tools, including limited understanding of technology and concerns about losing cultural knowledge.

Table 5: Correlation between Digital Technology Usage and Knowledge Transfer Effectiveness

Variable	Category	Pearson Correlation	Significance Level (p-value)
Digital Device Usage and Knowledge Sharing Frequency	High Usage vs Low Usage	0.75	$p < 0.05$
Frequency of Digital Knowledge Exchange and Knowledge Retention	Daily Exchange vs Monthly Exchange	0.68	$p < 0.05$
Digital Platform Use and Effective Knowledge Transfer	Mobile/Computer vs Radio/TV	0.82	$p < 0.01$
Elder Participation in Digital Sharing and Knowledge Transfer Success	Active Participation vs Limited Participation	0.70	$p < 0.05$
Technological Barriers and Knowledge Sharing Effectiveness	Low Barriers vs High Barriers	0.60	$p < 0.05$

Table 5 Explanation:

Digital Device Usage and Knowledge Sharing Frequency: This measures the correlation between the frequency of digital device usage (e.g., mobile phone, computer) and the frequency of knowledge sharing across generations. A positive correlation indicates that more frequent use leads to more knowledge exchange.

Frequency of Digital Knowledge Exchange and Knowledge Retention: This looks at how frequently digital tools are used for knowledge exchange and their effectiveness in retaining knowledge over time.

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Digital Platform Use and Effective Knowledge Transfer: This measures the correlation between the types of digital platforms used (e.g., mobile devices and computers vs. radio/TV) and the effectiveness of knowledge transfer.

Elder Participation in Digital Sharing and Knowledge Transfer Success: This evaluates how active participation by elders in digital knowledge sharing correlates with successful knowledge transfer between generations.

Technological Barriers and Knowledge Sharing Effectiveness: This assesses the relationship between the level of technological barriers (e.g., lack of digital literacy or poor internet connectivity) and the effectiveness of knowledge sharing.

3 Findings and Discussion

The findings from the study on digital technologies and intergenerational knowledge sharing within the Malayali Tribe in Kolli Hills reveal both opportunities and challenges in the adoption and impact of digital tools for knowledge transfer. The data collected from 20 respondents offer insights into the effectiveness, barriers, and benefits of integrating digital technologies in traditional knowledge-sharing systems.

Findings:

- **Impact on Knowledge Sharing:**
  - A significant number of participants (75%) reported a **positive impact** of digital technologies on knowledge sharing between generations, with digital platforms facilitating faster and more widespread exchange of agricultural practices, cultural knowledge, and survival skills. Younger participants highlighted the **ease of access** to information through digital devices, improving their understanding of new techniques.
  - 60% of respondents noted that digital technologies made it easier for younger generations to access valuable knowledge, with 50% agreeing that it helped preserve traditional practices. The **preservation of cultural knowledge** was seen as particularly important, with 60% considering it one of the major benefits.

- **Barriers to Digital Technology Use:**
  - The study also highlighted significant **barriers** to effective digital knowledge sharing. Approximately **50%** of participants cited **lack of digital literacy** among elders as the primary

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challenge, while **poor internet connectivity** (40%) and **lack of appropriate devices** (30%) were also identified as critical barriers.

- The **generational gap** also played a role in limiting the effectiveness of knowledge transfer, with **elders' limited participation** in digital exchanges being a common issue (30%).

❖ **Technological Benefits:**

- Digital technologies were perceived to be highly effective in enhancing communication between generations. About **65%** of respondents believed digital tools fostered improved communication between elders and youth, thus facilitating stronger family and community bonds.
- Furthermore, **60%** of participants reported that digital platforms helped preserve traditional knowledge and encouraged the documentation of oral histories, which had previously been at risk of being forgotten due to limited direct transmission between generations.

❖ **Empowerment through Digital Skills: 50%** of youth participants reported that digital technology usage had **empowered them** by improving their skills and expanding job opportunities. Elders also expressed a sense of empowerment through using digital tools to share their knowledge and connect with younger generations.

4 Discussion:

The findings suggest that digital technologies play a crucial role in facilitating intergenerational knowledge transfer within the Malayali Tribe in Kolli Hills, particularly in terms of improving access to information and communication. The integration of digital tools into traditional knowledge-sharing practices is particularly beneficial in preserving and passing down agricultural and cultural knowledge, which has been passed orally for generations.

However, the barriers identified, such as limited digital literacy among older generations and poor internet connectivity, highlight the challenges faced by the community in fully utilizing these tools. While younger participants are more adept at using digital platforms, elders, who hold valuable knowledge, struggle to engage with the technology. Addressing this gap is essential for ensuring that knowledge transfer is truly intergenerational and not limited by technological disparities.

The findings are consistent with studies in similar settings, which show that while digital technologies have the potential to improve knowledge transfer across generations, challenges related to access, training, and infrastructure remain significant obstacles. The importance of addressing these barriers through **community-based digital literacy programs** and improving **internet connectivity** cannot be overstated.

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Additionally, the positive impact on knowledge retention and empowerment suggests that digital technologies can bridge the gap between generations, enhancing the sharing and preservation of cultural knowledge. **Empowerment through digital skills**, especially for youth, opens new avenues for economic opportunities and strengthens their connection to traditional practices while adapting to modern demands.

5 Conclusion

The study on the role of digital technologies in facilitating intergenerational knowledge sharing within the Malayali Tribe in Kolli Hills has provided valuable insights into both the opportunities and challenges associated with their adoption. The findings indicate that digital technologies can significantly enhance knowledge sharing, enabling the younger generations to access agricultural knowledge, cultural practices, and life skills more efficiently. The ease of communication between generations has strengthened familial and community bonds, allowing for better intergenerational exchanges.

Despite these positive outcomes, the study also identified key barriers to digital technology use, including limited digital literacy among elders, poor internet connectivity, and a lack of access to appropriate devices. These barriers highlight the need for targeted interventions, such as digital literacy programs and infrastructural improvements, to ensure that digital tools can be effectively utilized by all members of the community, regardless of age.

6 Future Recommendations

1. **Digital Literacy Programs for Elders:** Implement **community-based digital literacy training programs** specifically targeting the elder generation. These programs should focus on basic digital skills, including how to use smartphones, access the internet, and engage with digital platforms for knowledge sharing. By improving their digital literacy, elders will be better equipped to engage in the knowledge-sharing process with younger generations.
2. **Infrastructure Improvement:** To address the **internet connectivity** issues, there is a need for improved **infrastructure** in remote areas of Kolli Hills. Collaboration with local government bodies and private telecom companies can help provide better internet services. This could include the establishment of **community internet centers** that offer affordable access to digital tools and high-speed internet for the local population.
3. **Promotion of Accessible Digital Devices:** Efforts should be made to provide affordable digital devices to community members, particularly for those who cannot afford smartphones or computers. Government initiatives, corporate sponsorships, or

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partnerships with NGOs could help make devices more accessible through **subsidized programs** or **loan schemes**.

4. **Integration of Traditional Knowledge in Digital Platforms:** Encourage the creation of **digital repositories** for traditional knowledge, where elders can record and share agricultural practices, cultural rituals, and local wisdom. This could be done through **audio, video, and text formats**, making it easier for younger generations to access and engage with the content. Collaborative platforms that facilitate both **asynchronous and synchronous communication** could also be developed to improve interaction.
5. **Fostering Intergenerational Workshops:** Organize **intergenerational workshops** and training sessions where both elders and youth can come together to share knowledge and learn about digital tools. These workshops can focus on the practical use of digital technology in day-to-day activities and knowledge preservation. Facilitators should emphasize the value of both traditional knowledge and modern digital tools in bridging generational gaps.
6. **Strengthening Government and NGO Support:** Government and non-governmental organizations (NGOs) should support the community by providing resources for digital literacy and technology adoption. Policy frameworks that encourage **technology integration in rural communities** and promote the preservation of indigenous knowledge through digital means could be established. Additionally, funding for local initiatives that aim to improve digital accessibility and education should be prioritized.

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