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Digital Literacy and Gender Inequality: Empowering Tribal Women in India's Digital Era

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Abstract: A statewide digital India plan was unveiled by the government in August 2015 with the goal of digitizing all element of everyday life transactions in India. On the other hand, women aren't specifically included as a target demographic for digital literacy in the policy documents. Nevertheless, digital literacy important for all people; therefore, the purpose of this article is to investigate how it has affected women. In light of the difficulties faced and the government's plans to close the digital gender gap, as well as socioeconomic status, this study represents a first effort to do just that in the Alirajpur tribal area of Madhya Pradesh. Gender disparities in computer literacy have multiple obvious causes, such as differences in infrastructure, geography, motivation, and economic circumstances. Cultural taboos, patriarchal mindset, and cultural policing are some of the unseen factors that limit women's access to resources stemming from the traditional gender roles in the workforce; as a result, only 35% of Indian women are currently employed in STEM fields. There is a significant digital gender gap in developing countries, such as India, where women face systematic deprivation of digital and technological literacy in addition to unpaid household work. This further disempowers them and robs them of economic and decision-making powers. Only 39% of the world's population has internet access, with 77% living in developed countries and 31% in developing countries.

Keywords: Daily Life Transactions; Cultural Taboo; Patriarchal Mindset; Digital Literacy; Digital Gender Gap; Technological Literacy; Decision-Making Powers; Technological Advancement; Economic Growth.

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1. Introduction

In the contemporary era of rapid technological advancement, digital infrastructure and literacy have emerged as essential drivers of economic growth and social development. Recognising the transformative potential of digital tools, the Government of India initiated the Digital India campaign in August 2015, intending to establish India as a digitally empowered society and a knowledge-driven economy. The initiative highlights the importance of integrating digital technologies across various domains, including governance, financial services, education systems, healthcare frameworks, and communication networks, thereby ensuring efficiency, transparency, and accessibility across these sectors. However, despite the inclusive rhetoric embedded within the policy framework, a critical analysis reveals a conspicuous oversight—the absence of women, particularly marginalised groups such as tribal women, as a distinct focal point in digital literacy policies [5]. The policy framework adopts

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a generalised approach, assuming that digital access and benefits will naturally percolate across all strata of society. This assumption, however, fails to account for the socioeconomic and cultural realities faced by marginalised communities, where structural inequalities exacerbate disparities in digital access. Tribal women, in particular, occupy a precarious position within this digital landscape. They are not only grappling with the general challenges associated with rural underdevelopment. Still, they are also subject to multiple layers of marginalisation rooted in economic deprivation, social exclusion, geographical isolation, and patriarchal constraints. These cumulative disadvantages contribute to their systematic exclusion from the digital ecosystem, thereby limiting their opportunities for participation in the evolving digital economy.

This research aims to investigate whether digital literacy initiatives can serve as effective tools for breaking the cycle of exclusion and promoting the economic empowerment of tribal women. By focusing specifically on tribal women in the Alirajpur district of Madhya Pradesh, the study aims to understand how digital literacy influences women's agency, decision-making power, and participation in income-generating activities, thereby contributing to their overall empowerment. A closer examination of the conditions prevalent in regions such as Alirajpur reveals a convergence of structural barriers that hinder women's access to digital resources. Visible impediments, such as inadequate infrastructure, a lack of internet connectivity, limited access to digital devices, and economic hardships, are prominent. These material challenges are compounded by the district's remote geographical location, which further curtails outreach and implementation of digital literacy programs.

Nevertheless, the barriers extend beyond material deprivation. Invisible socio-cultural factors such as rigid patriarchal norms, cultural taboos surrounding women's mobility and autonomy, and entrenched gendered divisions of labour significantly influence women's digital engagement. The social construction of roles, which demarcates certain activities as masculine (such as technology use) and others as feminine, often leads to self-imposed or externally enforced restrictions on women's use of digital tools. Such cultural conditioning not only limits their access to educational and economic opportunities but also curtails their potential to participate in broader development processes. These sociocultural limitations are starkly reflected in the broader national statistics, where only 35% of women enrol in STEM (Science, Technology, Engineering, and Mathematics) fields, underscoring systemic barriers to technological inclusion.

Given these complex realities, the present study adopts a critical and intersectional lens to assess whether digital literacy initiatives are adequately designed to bridge socioeconomic and cultural divides. It examines whether these initiatives can equip tribal women with essential digital skills, improve their access to economic resources, and ultimately enable them to achieve economic independence and social mobility. Through this exploration, the study not only addresses a significant gap in existing policy discourse but also aspires to contribute to the broader conversation on gender, technology, and empowerment in India. It advocates for the need to contextualise digital literacy programs within the unique socio-cultural dynamics of tribal communities, ensuring that such initiatives are not merely technological interventions but also tools for transforming traditional gender hierarchies and fostering inclusive development.

1.1. Research Problem

Despite national efforts to promote digital inclusion, tribal women in India continue to face significant obstacles in accessing digital technologies and related opportunities, resulting in their limited participation in the digital economy. Factors such as lack of infrastructure, economic deprivation, patriarchal attitudes, and socio-cultural restrictions combine to perpetuate this exclusion. Consequently, it raises an important question: Can digital literacy effectively act as an enabler for the economic empowerment of tribal women, overcoming both visible and invisible barriers?

1.2. Objectives of the Study

- To assess and address the challenges faced by tribal women in accessing digital literacy in the Alirajpur district of Madhya Pradesh.
- To study the government's strategies for bridging the digital gender divide in tribal areas, with a particular focus on the Alirajpur district.
- To examine the socio-cultural barriers within tribal communities that restrict women's engagement with technology and digital platforms.

1.3. Significance of the Study

This research holds profound academic and practical relevance, positioning itself at the confluence of gender studies, digital literacy, and socioeconomic empowerment. From an academic standpoint, it addresses a significant gap in existing scholarship by focusing specifically on the intersectional experiences of tribal women in India's digital landscape—a demographic often overlooked in mainstream studies on digital inclusion. Most existing literature tends to adopt a homogenous perspective, treating women as a uniform category, thereby glossing over the socioeconomic, cultural, and geographical realities of

marginalised subgroups like tribal women. This study, however, delves into the layered challenges unique to these women, offering a more nuanced and grounded understanding of how structural inequalities intersect with digital literacy efforts. It enriches the discourse by bringing in the voices and lived experiences of tribal women who contend with multiple axes of disadvantage, including poverty, remoteness, lack of education, and rigid patriarchal norms.

In addition to its academic contributions, the study holds practical significance for policymakers, governmental agencies, non-governmental organisations, and development practitioners. It critically evaluates the existing digital literacy programs and identifies where these interventions fall short in addressing the distinct needs of tribal women. By uncovering contextual barriers and programmatic gaps, the research provides actionable insights that can guide stakeholders in rethinking and redesigning digital literacy initiatives. Specifically, it emphasises the need to shift away from one-size-fits-all models and towards gender-sensitive, culturally rooted, and community-driven strategies that take into account the socio-cultural dynamics of tribal populations. Recommendations emerging from this study are expected to support the formulation of policies that are not only technologically sound but also socially responsive and inclusive.

Beyond the immediate academic and policy realms, the broader developmental implications of this research are substantial. Empowering tribal women with digital skills can have far-reaching multiplier effects, enhancing not just individual economic prospects but also contributing to the well-being of families and communities. Improved digital access can facilitate women's participation in income-generating activities, open new avenues for entrepreneurship, expand access to education and health information, and foster greater civic engagement. Such empowerment has the potential to break intergenerational cycles of poverty and exclusion, thereby advancing the goals of sustainable development, gender equality, and social justice.

Ultimately, this study aspires to advocate for a comprehensive, intersectional approach to digital literacy—one that recognises the interconnectedness of infrastructure, education, culture, and economic opportunities. By calling attention to the underlying socio-cultural and structural impediments, it emphasises the importance of integrating digital literacy efforts with broader strategies aimed at dismantling patriarchal barriers, fostering economic independence, and promoting social inclusion. In doing so, the research aims to make a meaningful contribution to the discourse on equitable digital transformation and to support the creation of empowerment pathways specifically tailored for tribal women in India’s evolving digital ecosystem.

Research suggests that digital literacy programs can play a key role in reducing the digital divide and promoting economic empowerment. Digital literacy enables individuals to access information, resources, and networks that support their economic development and well-being [3]. Digital literacy programs in Alirajpur may provide opportunities for tribal women to gain new skills and knowledge, interact with others in their communities and beyond, and access economic resources and opportunities. To maximise the potential of digital literacy programs for promoting the economic empowerment of tribal women in Alirajpur, a community-based approach that takes into account the population's unique requirements and challenges may be required.

Engaging with local communities and leaders, establishing alliances with organisations and institutions that support tribal women, and developing culturally appropriate and relevant digital literacy initiatives for this population are all examples of such approaches. The digital gender divides theory emphasises gender disparities in digital technology access and use, as well as the possible repercussions of this divide. According to this theory, women, especially those in low-income and marginalised communities, experience significant barriers to accessing and using digital technologies, limiting their opportunities for social and economic development. According to the theory, the digital gender divide is caused not only by fiscal and infrastructure obstacles, but also by societal and cultural norms that restrict women's access to and use of digital technologies.

One study that discusses the digital gender divide theory is "Women's Empowerment through Information and Communication Technologies (ICTs) in Developing Countries: Opportunities and Challenges" [6]. The research examines the potential of ICTs, including digital technologies, to support women's equality in emerging nations, as well as the obstacles and opportunities presented by the digital gender gap. According to the writers, digital tools can empower women. To attain gender equity and women's empowerment, the gender divides in the availability and use of these tools must be addressed. By providing tribal women with access to information, tools, and networks that support their economic growth, digital literacy can be a powerful tool for achieving economic freedom. Here are a few examples of how digital knowledge can aid in the economic empowerment of indigenous women:

- **Access to information and resources:** Through digital literacy, indigenous women can gain access to information and resources that help them develop the skills and knowledge necessary for economic freedom, such as financial literacy, business skills, and market insights.
- **Increased market opportunities:** With digital literacy, tribal women can gain access to worldwide marketplaces and consumers via online platforms, resulting in increased sales and income. This can also result in lower transaction costs and simpler access to a broader variety of products.

- **Improved communication and networking:** Digital proficiency enables indigenous women to interact more effectively and establish a network of like-minded individuals, facilitating the exchange of ideas and access to new marketplaces and potential partners.
- **Job creation:** Digital knowledge enables tribal women to explore various online earning opportunities, including freelancing, virtual assistant positions, and digital marketing.

Digital literacy has emerged as a vital instrument for advancing women's economic empowerment, as evidenced by numerous studies, notably "Digital Empowerment of Women in India" [4]. Their research underlines how access to digital tools and skills enhances women's opportunities for income generation, financial independence, and entrepreneurial ventures. Through digital platforms, women gain not only the ability to access markets, information, and financial services but also acquire critical skills required for active participation in the modern economy. This empowerment is particularly crucial in contexts where traditional societal structures limit women's mobility and decision-making powers.

Recognising the transformative potential of digital literacy, the Government of India has introduced several initiatives aimed at bridging the digital divide and promoting digital inclusivity. Programs such as Pradhan Mantri Gramin Digital Saksharta Abhiyan (PMGDISHA) and Mahila E-Haat are specifically designed to provide basic digital skills and online platforms to disadvantaged groups, including rural and tribal women. These efforts theoretically aim to equip marginalised communities with technological knowledge, enabling them to connect with broader economic networks, access government welfare schemes, and participate in digital marketplaces.

However, a closer examination of these initiatives reveals several inherent limitations that impede their effectiveness, particularly for marginalised groups like indigenous women in remote regions. One of the foremost challenges is the lack of robust digital infrastructure. Despite the proliferation of smartphones and affordable data plans, substantial portions of rural India continue to struggle with inconsistent internet connectivity, unreliable electricity supplies, and inadequate technical support systems. The Ministry of Electronics and Information Technology [9] reports that only about 25% of the rural population has access to a reliable internet connection. Consequently, many digital literacy programs fail to reach or adequately serve the intended beneficiaries, rendering large swathes of the population digitally excluded.

Beyond infrastructure, there is the issue of program design lacking relevance to the socio-cultural realities of marginalised communities. Many digital literacy programs follow a uniform structure, ignoring socioeconomic and cultural barriers faced by tribal and rural women. A study by ICRIER highlights that societal norms, family restrictions, and patriarchal attitudes often prevent women from participating in these initiatives. Without addressing these contextual challenges—such as cultural taboos, household responsibilities, and gendered perceptions of technology—programs risk low engagement and limited impact. Another key limitation is the narrow focus of these initiatives. Many digital literacy programs focus solely on basic technical skills, such as operating a smartphone or using the internet, without integrating them with broader empowerment goals, including financial literacy, entrepreneurship training, and access to credit and markets. This fragmented approach limits the long-term economic benefits of digital inclusion. True empowerment requires a holistic model that links digital skills with livelihood opportunities, social inclusion, and leadership development.

Therefore, for digital literacy initiatives to be genuinely transformative, a multidimensional and community-driven strategy is necessar**y**. Programs must be context-sensitive, taking into account the cultural, economic, and educational realities of tribal women. Moreover, digital inclusion should be coupled with infrastructural development, capacity-building efforts, and supportive policy frameworks that promote women's economic participation at every level. In conclusion, while government-led digital literacy initiatives have commendable potential in driving economic empowerment and fostering inclusion, they fall short due to infrastructural constraints, socio-cultural barriers, and fragmented scope. A more integrated, localised, and inclusive approach is essential to bridge these gaps and ensure that the benefits of digitalisation reach the most marginalised sections, particularly tribal women in remote areas.

2. Review of Literature

Following the NITI Aayog Report titled "Strategy for New India @75," India wants to erase the digital divide by 2022–2023 [2], for which initiatives were initiated in August 2015 by the Indian Prime Minister, Narendra Modi. According to the NFHS-5 (National Family Health Survey), only 33.3% of all women in India have ever used the internet, with the figure dropping to 24.6% in rural India. In Madhya Pradesh, 26.9% of all women have used the internet at some point in their lives, whereas 20.1% of women in rural Madhya Pradesh [3].

It indicated the promotion and integration of ICT for women's empowerment. Digitalisation empowers women by allowing them to work in a flexible environment, gain new skills, and collaborate. It also empowers women through initiatives such as the Nirbhaya app, Beti Bachao, the Women's Helpline Scheme, and the Mahila Digital Saksharata Abhiyan. However, a lack

of awareness about digital education, combined with a lack of confidence and support in information technology, may have a detrimental impact on women's participation [7].

The fundamental purpose of research is to guarantee that girls are born, reared, and educated without discrimination. More focus should be placed on the development of Scheduled Castes and Scheduled Tribes, particularly women, through social schemes and programs. The nature of the case study was exploratory and descriptive. The study notes that women are empowered by digitalisation, which enables them to work more flexible hours and acquire new skills [10]. India is a land of villages, with 68% of the population residing in around 6,49,481 villages. India cannot flourish until our communities prosper. Various programs aimed at improving Indian villages have been launched since independence, but they have all failed. In comparison to metropolitan India, the Indian countryside lags far behind. The information economy will rule the future. With the increasing use of smartphones, it is now possible to provide multiple services with a single click, thereby bridging the digital divide [8]; [2].

This study looks at the variables that contribute to the high dropout rate. It is entirely based on primary data acquired from a questionnaire-based survey and identifies financial issues, parental alcoholism, and unfamiliarity with the language of instruction as the primary causes of low digital literacy [1]. According to previous research, women's empowerment is crucial for societal development; however, their socioeconomic status remains low. Women cannot be fully empowered until they are educated and become economically self-sufficient. The twenty-first century is the era of information and communication technologies. One will not stand out if she is unable to accept modern technologies. With all of the societal ills in their clutches, women cannot walk lockstep with the rest of society. The majority of studies relied on secondary data, resulting in a hazy representation of reality. It is a deeply rooted problem that requires in-depth research to develop more accurate conclusions and provide practical remedies (Table 1).

Table 1: Summary of research studies on education and social empowerment

Name	Research Design	Data	Variable`	Remark
Mohan et al. [1]	Analytical Research	Primary data	Education, Health, transportation, family support, socio-psychological factor (low self-esteem)	Multilingual mobile technology
Vij [2]	Evaluation Research	Secondary data	Education	1. Government support to the telecom service provider 2. Digitalised bureaucracy. 3. Digitally encouraging with the assistance of secondary social institutions
Khairnar [7]	Analytical Research	Secondary Data	Family Support, Gender, Education	1. Digitalisation Women Empowerment.
Nedungadi et al. [8]	Analytical Research	Primary Data	Health, Education, Financial Literacy, Culture, Language, Age,	1. Role of Civil Societies, Schools, And Government Institutions in Digital Literacy (Social Institutions). 2. An innovative Digital Learning Model.

			Gender	3. Empowering youth through digital literacy to address socioeconomic problems. 4. Challenges (Unplanned Training, Language Issue) 5. Privacy Concerns (Awareness).
Nayak et al. [10]	Exploratory and Descriptive Research	Primary and Secondary Data	Education, Socioeconomic Condition, Language, infrastructure	1. Indigenisation and Modernisation of Education. 2. Increase Participation In Higher Education With The Help Of ICT
Hargittai [11]	Descriptive-Analytical, and exploratory.	Secondary Data	Education	1. Financial Literacy for Women Apart from a Minimum Level of General Education 2. Sms Alerts in More Regional Languages 3. ICT Awareness Camps 4. Internet Facilities and Teledensity Be Further Expanded to Rural Areas 5. ICT-Based Kiosks (Weather, Prices of Agricultural Commodities)

2.1. Research Gap

The reviewed literature collectively highlights the importance of digital literacy in women's empowerment, with a primary focus on general rural socioeconomic barriers and government initiatives. However, the following critical gaps emerge:

- **Lack of Focus on Tribal Women:** Most studies address rural or general women's digital literacy but overlook the unique socio-cultural dynamics and specific challenges faced by tribal women, particularly in regions like Alirajpur, Madhya Pradesh.
- **Limited Primary Data on Ground Realities:** Many studies rely heavily on secondary data, providing broad trends but lacking in-depth qualitative insights from the actual beneficiaries, especially regarding their lived experiences and perceptions of digital initiatives.
- **Neglect of Invisible Socio-Cultural Barriers:** While infrastructure, economic status, and education are discussed, invisible factors such as patriarchal norms, cultural taboos, and gendered perceptions of technology use are insufficiently explored.
- **Minimal Analysis of Policy Implementation Gaps:** Though government schemes are mentioned, there is a lack of critical examination of how effectively these policies are implemented at the grassroots level, particularly in tribal areas.
- **Absence of Intersectional Approach:** The intersection of gender, caste, class, and tribal identity in contributing to the digital divide is missing, resulting in a fragmented understanding of the issue.

3. Methodology

Universe of the study: Tribal Women of Alirajpur District of MP (3,66,457-census 2011)
Sample size: 135 Women
Unit of the study: Women
Sampling method: Convenient sampling was done in the suburban area of Alirajpur District.
Data collection: Primary Multidimensional questionnaire-based Survey

Research Paradigm: This study employs a quantitative research paradigm. The data is collected and analysed from scientific digital survey forms filled out on a one-to-one interaction basis to minimise the effect of the digital interface. To improve the accuracy of their responses, respondents were informed about the survey and the meaning of each question in their native

language. The data was collected from respondents belonging to the age range of 12 to 60. To ensure accuracy and gain a deeper understanding of the responses, the obtained data were analyzed using various statistical techniques.

Theoretical Paradigm: The theoretical paradigm of the digital divide can provide a valuable framework for understanding the challenges faced by tribal women in accessing digital literacy programs and their potential role in promoting economic empowerment [11]. Research suggests that digital literacy programs can play a crucial role in reducing the digital divide and promoting economic development [3]. To maximise the potential of digital literacy programs for promoting the economic empowerment of tribal women in the Alirajpur district of Madhya Pradesh, a community-based approach that takes into account the specific needs and challenges faced by this population may be necessary.

Description of the Field: Alirajpur, located in the westernmost part of Madhya Pradesh, shares its borders with Gujarat and Maharashtra. The city is situated at a considerable distance from Tier I cities, including Ahmedabad (259 km), Mumbai (503 km), and Pune (593 km). The closest Tier II cities are Vadodara (151 km), Indore (203 km), and Surat (253 km). The only mode of transportation between these cities is by road, as there is no direct railway connectivity available. The lack of proper transportation infrastructure has led to limited economic growth opportunities for the people of Alirajpur.

Additionally, the absence of an airport in the district has hindered the growth of tourism, which could have been a potential source of income for the locals. However, Alirajpur has its advantages as well, in terms of location. The city's proximity to Gujarat and Maharashtra has enabled cross-state trade, creating opportunities for small-scale businesses to thrive. The city's location has also enabled it to preserve its unique cultural heritage and traditional customs. Overall, while the lack of proper transportation infrastructure has impacted Alirajpur's economic growth, the city's location has also allowed for the preservation of its distinct cultural heritage. However, to improve the city's economic prospects and increase its overall development, it is crucial to focus on improving its transportation infrastructure. The development of better transportation infrastructure can enable the city to capitalise on its strategic location and unlock its full economic potential, resulting in enhanced standards of living and a greater social impact (Figure 1).

Figure 1: Location of Barwani District in Madhya Pradesh, India

3.1. Demographics Census in 2011

Schedule Tribe: 89% (6,48.638)
Schedule Caste: 3.7% (26,887)
Sex Ratio: 1011
Child Sex Ratio: 978
Literacy Rate: 36.1%
Work Participation Rate: 50.2%
Population Density: 229 (per sq. km)

4. Analysis

4.1. Literacy and Digital Literacy

The analysis of the collected data provides information on the literacy and digital literacy rates among tribal women. The literacy rate among tribal women is reported to be 67.4%, which suggests that more than one-third of the surveyed tribal women are illiterate. This highlights the need for initiatives to promote literacy among tribal women. The digital literacy rate among tribal women is reported to be 60.7%, which includes familiarity with smartphones and other digital devices. This suggests that a majority of the surveyed tribal women are unfamiliar with using digital devices or accessing the internet. This could limit their access to information and opportunities available through digital channels, including education, employment, and entrepreneurship.

However, the digital literacy rate among literate tribal women is reported to be 80%, indicating that literacy is a significant factor in achieving digital literacy among this population. This highlights the need for initiatives that promote both literacy and digital literacy among tribal women. Furthermore, the analysis reports that 76.4% of the digitally literate tribal women are first-generation learners, indicating that efforts to promote digital literacy among tribal women are yielding results. The analysis provides insights into the training patterns of digitally literate tribal women. Specifically, the data show that 26.4% of digitally literate tribal women have received formal computer training, indicating a relatively low number of women who have undergone formal training in this area.

Additionally, among the digitally literate tribal women who have received formal training, only 18.8% of them received it from computer skill development centres, with the majority (27.5%) opting for private computer coaching. This data suggests that there is a need for more accessible and affordable training options for digitally literate tribal women. Computer skill development centres may need to increase their outreach efforts to ensure that more women are aware of their services and can take advantage of the formal training they offer. Additionally, private computer coaching may need to be made more affordable, or alternative low-cost training options may need to be explored to make digital literacy training more accessible to this population.

This analysis highlights the limited usage of computers among tribal women, with only 34.7% of them using computers regularly. On the other hand, the majority of literate tribal women (88.9%) are familiar with smartphone operations and own a smartphone (84.7%). However, only a small percentage of them (5.6%) use their smartphones for commercial or banking purposes. The analysis suggests that while there may be some level of digital literacy among tribal women, there are still significant barriers to accessing and utilising technology for economic purposes. It is essential to identify and address these barriers to promote the economic empowerment of tribal women through digital literacy initiatives.

Ultimately, the analysis reveals the views of tribal women on digital literacy and its influence on their economic empowerment. The first finding of the analysis states that 94.4% of the tribal women surveyed believe there are no special provisions in place to help women become digitally literate. This points towards a lack of awareness and access to digital literacy programs that cater specifically to women, which can be a significant barrier to their progress in today's digital age. The second finding reveals that 91.7% of the surveyed women have never benefited from government-run digital literacy initiatives. This highlights a significant gap between the government's efforts to promote digital literacy and its actual impact on the ground. This calls for a critical review of the effectiveness of such initiatives, with a focus on making them more accessible and beneficial to the tribal communities.

The third finding of the analysis suggests that 88.9% of the surveyed women are optimistic about the economic empowerment of tribal women through digital literacy. This indicates that tribal women recognise the potential of digital literacy in enhancing socioeconomic status and are willing to engage with it to achieve better opportunities and outcomes. Overall, the analysis emphasises the importance of addressing the barriers to digital literacy faced by tribal women through accessible and effective initiatives. It is crucial to harness the willingness among tribal women to embrace digital literacy as a means of achieving greater economic empowerment through targeted policies and programs. The higher digital literacy rates among literate and first-generation tribal women suggest that targeted initiatives can yield positive results in promoting both literacy and digital literacy among tribal women.

4.2. Working Tribal Women and Digital Literacy

The survey revealed that a significant percentage (23.7%) of the surveyed tribal women are employed, with 21.9% working in government jobs, 59.4% in private jobs, and 18.8% being self-employed. The literacy rate among working tribal women is reported to be 71.9%, indicating that a considerable proportion of employed women are literate. Additionally, 78.1% of the working tribal women are digitally literate, including familiarity with smartphones. However, only 28.1% of tally-literate

women have received formal computer training, and among those who have received training, 18.8% have received it from computer skills courses.

Interestingly, only 31.3% of the working tribal women use computers regularly, indicating that digital literacy may not necessarily translate into frequent computer usage. Moreover, although 79.1% of indigenous women are familiar with operating a smartphone, only 12.5% of them use it for business purposes, and a mere 6.3% use it for banking. The survey also sheds light on the perceptions of working tribal women towards digital literacy. 87.5% of them believe that there are no special provisions for women to become digitally literate, indicating a need for more targeted digital literacy initiatives. Moreover, 81.3% of the women have never benefited from government-run digital literacy initiatives, highlighting the need for better implementation and accessibility of such programs.

Despite these challenges, 81.3% of the surveyed women are positively hopeful about the potential of digital literacy for the economic empowerment of tribal women. This demonstrates the potential of digital literacy to promote entrepreneurship, financial inclusion, and economic empowerment among tribal women. In conclusion, the paragraph highlights both the progress made and the challenges faced in promoting digital literacy among working tribal women. While a considerable proportion of women are employed and digitally literate, there remains a need for more targeted digital literacy initiatives, increased accessibility of government-run programs, and a greater emphasis on regular computer usage to ensure that tribal women can fully benefit from digital literacy.

4.3. Tribal Housewives and Digital Literacy

The survey reveals that a substantial proportion (66.7%) of the tribal women surveyed are illiterate. The literacy rate among tribal homemakers is reported to be 64.7%, which is lower than the overall literacy rate of tribal women. Moreover, the digital literacy rate among tribal homemakers is only 53.3%, including familiarity with smartphones, indicating a need for more targeted digital literacy initiatives for this group. However, the digital literacy rate among literate tribal homemakers is higher at 74.1%. Interestingly, only 14.8% of the digitally literate tribal women have received formal computer training, and out of those who have received training, only 18.5% believe that the government provides support for digital literacy.

This suggests that there is a need for better implementation and accessibility of government-run digital literacy initiatives. Additionally, only 15.6% of the tribal homemakers use computers regularly, indicating a need for greater emphasis on computer usage to ensure that tribal women can fully benefit from digital literacy. However, it is worth noting that a considerable proportion of tribal homemakers are familiar with smartphones, with 83.3% reporting that they know how to operate one, and 5% owning a smartphone. Yet, only 1.1% of them use smartphones for commercial purposes.

The Survey also highlights the perceptions of tribal homemakers towards digital literacy. 98.8% of them believe that there are no special provisions in place to help women become digitally literate, creating a need for more targeted initiatives. Moreover, 94.4% of the women have never benefited from the government-run digital literacy initiatives, highlighting the need for better implementation and accessibility of such programs. Despite these challenges, 77.8% of the surveyed tribal homemakers are positively hopeful about the potential of digital literacy for the economic empowerment of tribal women, indicating that digital literacy has the potential to promote entrepreneurship, financial inclusion, and economic empowerment among tribal women.

In conclusion, the paragraph emphasises the need for more targeted digital literacy initiatives for tribal homemakers, including enhanced accessibility and improved implementation of government-run programs. While a considerable proportion of tribal homemakers are familiar with smartphones, there is still a need for greater emphasis on regular computer usage to ensure they can fully benefit from digital literacy. Moreover, the perceptions of tribal homemakers towards digital literacy suggest that more efforts are needed to create awareness and promote the benefits of digital literacy among this group.

5. Conclusion

5.1. Socio-Cultural Challenges Faced by Tribal Women

Despite the increasing spread of digital technology, tribal women continue to face multiple socio-cultural barriers that hinder their full participation in the digital and economic spheres:

- **Literacy vs. Digital Proficiency Gap:** Although 67.4% of the tribal women surveyed are literate, and 60.7% are familiar with digital devices or the internet, a noticeable gap remains between basic literacy and actual digital proficiency. Literacy alone does not guarantee meaningful engagement with digital tools, especially when formal training is absent.

- **Low Employment Rates:** Only 23.7% of surveyed tribal women are employed, with a majority working in informal or private sectors. This limited economic participation reflects both structural barriers and cultural expectations regarding women's roles.
- **Minimal Use of Technology for Economic Activities:** Among the employed tribal women, only 31.3% use computers regularly, and a few utilise smartphones for essential activities such as business or banking. This indicates underutilization of available technology, primarily due to a lack of skills, confidence, or access to digital platforms tailored to their needs.
- **Housewives' Limited Digital Access:** A significant portion of the tribal women surveyed are homemakers, and their literacy rate is lower than the overall literacy rate of tribal women. Only 53.3% of tribal homemakers are digitally literate, underscoring the urgent need for targeted digital literacy programs specifically designed to address this group. The absence of formal training further limits their capacity to engage in digital or economic activities.
- **Patriarchal and Cultural Barriers:** Deep-rooted patriarchal mindsets and rigid gender roles continue to dictate what is considered 'appropriate' for women, especially in tribal settings. This often results in restrictions on women's mobility, education, and exposure to technology.
- **Positive Outlook Amid Challenges:** Despite these challenges, there is an encouraging trend—81.3% of surveyed tribal women recognise the potential of digital literacy to enhance their socioeconomic status. This positive outlook highlights an inherent willingness to embrace digital tools, provided they receive adequate support and training.

5.2. Challenges to Government Initiatives for Promoting Digital Literacy among Tribal Women

While the government has rolled out several initiatives aimed at enhancing digital literacy across India, the ground realities reveal a disconnect between policy intent and actual impact, particularly among tribal women. The following key challenges have been identified:

- **Gap between Policy and Practice:** A significant gap exists between government-led digital literacy programs and their effectiveness at the grassroots level. Despite various schemes and campaigns, the benefits have not sufficiently reached marginalised communities, especially tribal women.
- **Low Perceived Government Support:** Alarmingly, only 18.5% of tribal women who have received formal computer training believe that the government provides adequate support for digital literacy. This statistic indicates a lack of visible, accessible, or impactful interventions perceived by the beneficiaries themselves.
- **Inadequate Women-Centric Programs:** A critical shortcoming is the absence of gender-sensitive programs. 87.5% of the surveyed women expressed that there are no special provisions targeted at women to facilitate digital literacy, signalling the need for gender-specific initiatives that address the unique socio-cultural and economic challenges faced by tribal women.
- **Lack of Awareness and Outreach:** Many tribal women remain unaware of existing digital literacy schemes. There is an apparent deficiency in communication strategies and outreach mechanisms, which fail to adequately inform and attract women from remote tribal areas to these programs.
- **Accessibility and Affordability Issues:** The implementation of government programs often overlooks the economic and logistical constraints faced by tribal women. Accessible, affordable, and locally available training options remain limited, restricting participation.
- **Need for Enhanced Infrastructure and Awareness Centers:** There is also a pressing need for more computer skills development centers in tribal areas and efforts to raise awareness about them. Without localised training facilities and reliable infrastructure, the effectiveness of government initiatives remains compromised.

5.3. Suggestions

- More targeted digital literacy initiatives for homemakers and those who have not received formal computer training.
- More accessible and affordable training options for digitally literate tribal women, as well as increased awareness of computer skills development centres.
- More targeted initiatives for women to become digitally literate, and better implementation and accessibility of government-run programs.
- Emphasise regular computer usage to ensure that tribal women can benefit fully from digital literacy.
- Raise awareness campaigns for the benefits of digital literacy among tribal women.

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