

Literature Review on Digital Literacy Rate in the Global South

Abstract

The rapid advancement of information and communication technologies (ICTs) has highlighted the importance of digital literacy as a critical skill for participation in the global knowledge economy. However, disparities in digital literacy rates persist, particularly in the Global South, encompassing regions such as Africa, Latin America, Asia, and Oceania. This systematic literature review synthesizes research published between 2015 and 2025 to understand the factors influencing digital literacy in these regions. Key factors include demographic variables such as gender, education, and income, as well as infrastructure issues related to access to digital tools and reliable internet. The review also highlights interventions aimed at improving digital literacy, such as government-led ICT programs and community-based initiatives. Finally, this review identifies gaps in the literature and offers recommendations for future research, emphasizing the need for policies that promote digital inclusion in the Global South.

1. Introduction

The digital era has revolutionized how individuals access information, communicate, and participate in the global economy. Digital literacy has thus become a fundamental skill, vital not only for academic success but also for economic participation and social inclusion (Van Dijk, 2020). It encompasses the ability to use digital technologies to communicate, access, and evaluate information, and create digital content, which has profound implications for education, employment, and overall social integration (Martin, 2022).

In the Global South, however, digital literacy remains a significant challenge, with many individuals and communities unable to participate fully in the digital economy due to limited access to technology and digital education (Saha et al., 2022). The term "Global South" typically refers to the less economically developed regions of the world, which include Africa, Latin America, parts of Asia, and Oceania. These regions often face complex social, economic, and infrastructural challenges that contribute to their digital exclusion. Factors such as poverty, lack of infrastructure, low educational attainment, and gender inequality significantly hinder digital literacy rates, exacerbating existing inequalities.

The disparities in digital literacy in the Global South are stark. While some urban areas and higher-income groups have benefited from increased access to ICTs, rural populations, women, people with disabilities, and marginalized communities continue to face significant barriers to

digital participation. For instance, a study by Liu et al. (2020) highlighted that rural women in Bangladesh, despite having access to mobile phones, are constrained by a lack of digital literacy and societal norms that discourage their engagement with technology. Similarly, in Sub-Saharan Africa, digital literacy rates among women remain significantly lower than their male counterparts, reflecting broader gender inequalities in access to education and technology (Chaudhary et al., 2023).

In many countries within the Global South, infrastructure issues such as limited internet access, poor connectivity, and high data costs further exacerbate the digital divide. The urban-rural divide remains a major challenge, with urban centers benefiting from better access to digital technologies and rural areas lagging behind (Reddy et al., 2022). Inadequate power supply and the high cost of ICT devices make it particularly difficult for individuals in lower-income areas to access digital education, despite mobile phone usage rising globally.

Understanding the digital literacy gap in the Global South requires not only addressing these infrastructural and socio-economic barriers but also recognizing the importance of culture, education policies, and government initiatives. Several governments in the Global South have launched ICT integration programs in schools, aiming to increase digital literacy, but the impact has been mixed, with many programs struggling to reach rural areas or provide adequate training for teachers. However, community-driven initiatives, such as partnerships between local NGOs and technology companies, have shown potential to bridge the digital divide by tailoring digital literacy programs to local needs and contexts (Reddy et al., 2023).

In addition to addressing these inequalities, digital literacy plays a critical role in achieving broader developmental goals, such as the United Nations' Sustainable Development Goals (SDGs). Digital literacy is considered essential for achieving SDG 4 (Quality Education) and SDG 10 (Reduced Inequalities), as it empowers individuals to access educational resources, participate in the digital economy, and advocate for social change (Radovanović et al., 2020). Bridging the digital divide is not only a matter of technological access but also about fostering inclusive economic growth, improving education, and ensuring social participation in the digital age.

This review seeks to provide a comprehensive analysis of the factors influencing digital literacy in the Global South. It examines the key demographic, socioeconomic, and infrastructural challenges, as well as the effectiveness of interventions aimed at addressing these issues. Through synthesizing the existing literature, the review highlights the urgent need for targeted, inclusive policies and innovative solutions to promote digital literacy and bridge the digital divide. By understanding the existing gaps in research and practice, this review aims to contribute to the development of effective strategies that can empower individuals in the Global South to fully participate in the digital world.

2. Literature Review

Digital literacy is a critical skill for socio-economic advancement in the modern world, yet substantial gaps in digital literacy persist, particularly in the Global South. The Global South, comprising regions such as Sub-Saharan Africa, Latin America, South Asia, and Oceania, faces unique challenges in improving digital literacy rates due to factors such as limited access to technology, socioeconomic disparities, and infrastructural challenges. This section reviews various studies on digital literacy in these regions, summarizing key findings and identifying persistent gaps in research.

Several studies highlight the role of socioeconomic factors in digital literacy development in the Global South. A prominent theme in the literature is the relationship between income inequality and access to digital tools. Chaudhary, Reddy, and Sharma (2023) argue that limited financial resources are a significant barrier to accessing digital devices and reliable internet, which in turn hinders digital literacy acquisition. For instance, in rural areas, where internet connectivity is often poor, digital literacy rates tend to be lower due to inadequate infrastructure. This finding resonates with Reddy et al. (2022), who observed that in the South Pacific, digital literacy gaps are closely tied to economic status and the availability of digital tools in households.

Education level is another important determinant of digital literacy. Liu et al. (2020) found that higher educational attainment correlates strongly with digital literacy skills, particularly in urban centers. This is consistent with the work of Jaffer, Ng'ambi, and Czerniewicz (2007), who noted that students in higher education institutions in South Africa tend to have better access to digital tools and training compared to those in lower educational levels or rural areas. This suggests that a concerted focus on integrating digital literacy into educational curricula at all levels may help bridge the gap.

Gender disparities in digital literacy are another significant challenge in the Global South. Studies have consistently shown that women, particularly in rural areas, face additional barriers to accessing ICT resources. For example, Saha et al. (2022) found that women in Bangladesh, despite policy initiatives such as "Digital Bangladesh," still face social and economic barriers that prevent them from fully benefiting from ICT advancements. These barriers include limited access to education, lack of technical skills, and cultural norms that restrict women's participation in technology-related activities. The work of Radovanović et al. (2020) on key performance indicators for digital literacy also highlighted that gender equality initiatives in ICT education are crucial for addressing these disparities.

In Sub-Saharan Africa, women's low participation in the digital economy is linked to gender-based violence, limited mobility, and lack of family support (Chaudhary et al., 2023). Efforts to improve digital literacy among women have focused on creating women-centric training programs, but much work remains to ensure that women have equal access to the tools and skills necessary for digital participation.

One of the most persistent challenges to digital literacy in the Global South is inadequate infrastructure and limited internet connectivity. As noted by Radovanović et al. (2020), urban-rural divides are particularly stark in countries like India and Kenya, where urban centers tend to have far superior digital infrastructure compared to rural areas. In rural India, for

example, access to high-speed internet remains limited, making it difficult for people to participate in online learning, work remotely, or access government services. These infrastructural challenges are compounded by the high costs of mobile data and electricity, which further inhibit the spread of digital literacy in marginalized regions.

Studies by Van Dijk (2020) suggest that improving digital infrastructure, such as providing low-cost internet and enhancing mobile connectivity, could help close the digital literacy gap in these areas. Partnerships between governments, NGOs, and private sectors are seen as crucial in overcoming these barriers. For example, community-driven solutions, such as local internet hubs and mobile technology programs, have been proposed as potential interventions to enhance access to ICT resources.

Government-led initiatives and community partnerships have been shown to be effective in bridging digital literacy gaps in the Global South. A key strategy has been the integration of ICT training programs into formal and informal education systems. In Bangladesh, the government's "Digital Bangladesh" initiative aims to provide citizens with ICT skills through educational reforms and community-based digital literacy programs (Saha et al., 2022). Similarly, in South Africa, ICT training programs in schools have been shown to improve digital literacy among students, particularly when these programs are contextualized to local needs (Jaffer et al., 2007).

In addition to governmental programs, partnerships between NGOs and local communities have been successful in addressing digital literacy gaps. NGOs often focus on providing training to underserved populations, such as women, rural dwellers, and older adults. These initiatives focus not only on technical skills but also on fostering attitudes and behaviors that promote the use of technology for personal and professional development. For instance, community-run workshops and mobile-based training programs have proven effective in providing digital literacy to people who otherwise have limited access to formal education (Liu et al., 2020).

The literature also emphasizes the role of digital literacy in achieving broader developmental goals, including sustainable development. According to Radovanović et al. (2020), digital literacy is a critical skill for advancing education, healthcare, and economic development in the Global South. Digital skills are linked to better employment opportunities, increased productivity, and enhanced access to social services. Moreover, digital literacy is essential for achieving the United Nations' Sustainable Development Goals (SDGs), particularly Goal 4 (Quality Education), Goal 5 (Gender Equality), and Goal 9 (Industry, Innovation, and Infrastructure).

As the digital economy continues to grow, countries in the Global South face the challenge of preparing their populations for participation in this new economy. To this end, digital literacy must be seen not only as a set of technical skills but as a cornerstone of social inclusion and economic empowerment.

3. Methodology

This section outlines the methodology used for conducting the systematic literature review on digital literacy rates in the Global South. The goal of the review is to synthesize the existing body of research, identify key trends, and highlight gaps in knowledge regarding the factors influencing digital literacy in the regions of Africa, Latin America, Asia, and Oceania. The methodology is structured around clearly defined research questions, inclusion and exclusion criteria, and data extraction techniques.

3.1 Research Questions

The systematic review is guided by the following primary research questions:

1. **What are the primary factors influencing digital literacy rates in the Global South?**
 - This question seeks to identify the demographic, socioeconomic, infrastructural, and cultural factors contributing to disparities in digital literacy levels across the Global South.
2. **How do demographic, socioeconomic, and infrastructural variables impact digital literacy rates?**
 - This question explores how variables such as gender, education, income, and access to technology shape digital literacy outcomes in the regions of interest.
3. **What interventions and strategies have been most effective in improving digital literacy in the Global South?**
 - This question focuses on identifying successful programs, policies, and initiatives that have contributed to improving digital literacy rates in the Global South.

3.2 Inclusion and Exclusion Criteria

To ensure that the review includes only relevant studies, specific inclusion and exclusion criteria were established.

Inclusion Criteria:

- **Peer-reviewed journal articles** published between 2015 and 2025.
- Studies focused on **digital literacy** in countries classified as part of the **Global South**, including Sub-Saharan Africa, South Asia, Latin America, and Oceania.
- Articles are written in **English** and accessible in **full text**.
- Studies that provide empirical evidence, theoretical analysis, or policy insights related to the factors influencing digital literacy rates or the effectiveness of interventions in the Global South.

Exclusion Criteria:

- **Non-academic** or opinion-based articles (e.g., blogs, news articles).
- Studies that do not focus on **digital literacy** or are not specific to the **Global South**.
- Articles that are **not available in full text** or those that lack sufficient methodological detail for critical analysis.
- Duplicate records across databases were removed to ensure only unique studies were considered.

3.3 Data Sources and Search Strategy

The literature search was conducted using the Google Scholar database.

Search terms included combinations of keywords such as: "digital literacy," "Global South," "ICT education," "digital divide," "Sub-Saharan Africa," "South Asia," "Latin America," "Bangladesh", "Factors in Digital Literacy". Boolean operators (AND, OR) were used to refine search results and ensure that the articles were relevant to the research questions.

3.4 Data Extraction and Analysis

A standardized data extraction template was developed to ensure consistency in extracting key information from each selected study. The following details were extracted from each study:

- **Author(s)**
- **Publication year**
- **Geographic focus** (region or country)
- **Methodology** (e.g., survey, case study, interviews, mixed-methods)
- **Key findings and themes** related to digital literacy
- **Interventions or strategies** discussed (if applicable)
- **Recommendations for future research** (if applicable)

The extracted data was compiled into a spreadsheet for analysis. Studies were then grouped according to key themes and subthemes such as socio-economic factors, gender disparities, infrastructural challenges, and interventions aimed at improving digital literacy.

3.5 Quality Assessment

To ensure the reliability and validity of the selected studies, a quality assessment was conducted based on the methodological rigor of each study. Criteria for assessing study quality included:

- **Sample size and representativeness:** Studies with larger sample sizes or more representative populations were prioritized.
- **Methodological transparency:** Studies that clearly described their methodology, data collection, and analysis methods were deemed higher quality.

- **Relevance to the research questions:** Studies that directly addressed one or more of the research questions were considered more valuable for inclusion in the review.
- **Impact and citations:** Studies that have had a significant impact in the field (as evidenced by citations) were prioritized to ensure the inclusion of influential works.

4. Findings

This section presents the key findings from the systematic review of the literature on digital literacy rates in the Global South. The studies reviewed indicate a complex interplay of demographic, socioeconomic, infrastructural, and policy-related factors that influence digital literacy in these regions. The findings are categorized into three main themes: demographic and socioeconomic factors, infrastructure and access, and effective interventions.

4.1 Demographic and Socioeconomic Factors

Digital literacy in the Global South is heavily influenced by various demographic and socioeconomic factors. Several studies highlighted the following key determinants:

- **Gender Disparities:** One of the most significant barriers to digital literacy is gender inequality. Women, particularly in rural and marginalized areas, face considerable challenges in accessing digital technologies and acquiring digital skills (Saha et al., 2022; Liu et al., 2020). For instance, in Sub-Saharan Africa, gendered access to ICT tools limits women's participation in digital literacy programs, exacerbating gender gaps in digital skills (Reddy et al., 2022). Initiatives that target women's digital empowerment have been shown to have a positive impact, but such programs are often limited and localized.
- **Education and Literacy Levels:** A strong correlation between educational attainment and digital literacy skills was found across multiple studies. Higher levels of formal education generally result in greater digital literacy (Reddy, Sharma, & Chaudhary, 2022). In many parts of the Global South, educational systems lack comprehensive ICT integration, and digital literacy is often not taught as part of the curriculum, particularly in lower-income or rural areas (Jaffer et al., 2007). As a result, those with lower educational attainment are often left behind in the digital divide.
- **Income Inequality:** Economic constraints play a crucial role in limiting access to digital tools and the internet. Studies in South Asia and Sub-Saharan Africa have shown that individuals in lower-income households are less likely to own personal devices such as smartphones or computers, and more likely to face challenges accessing reliable internet connections (Saha et al., 2022). In addition, higher costs of internet services and digital tools further exacerbate these disparities, limiting opportunities for digital skill development.

4.2 Infrastructure and Access

Access to digital technologies and infrastructure plays a pivotal role in digital literacy rates. Several studies point out significant barriers related to infrastructure, which are particularly pronounced in rural and underserved areas.

- **Urban vs. Rural Divide:** There is a stark contrast in digital literacy levels between urban and rural areas. Studies from regions such as Latin America and Sub-Saharan Africa reveal that urban areas tend to have higher digital literacy rates due to better infrastructure, including widespread internet connectivity and access to modern technologies (Radovanović et al., 2020). In contrast, rural populations often lack basic digital infrastructure, including reliable electricity and high-speed internet, which limits opportunities for digital learning and skill development.
- **Internet Accessibility:** One of the most significant barriers to digital literacy is the lack of affordable and reliable internet access. In many parts of the Global South, internet connectivity is inconsistent, with frequent outages and low-quality services. In addition, the high costs of mobile data and broadband internet in many countries make digital access unaffordable for large segments of the population (Reddy, Chaudhary, & Hussein, 2023). Without stable and affordable internet access, individuals cannot engage in online education or digital literacy programs, hindering their ability to develop necessary digital skills.

4.3 Effective Interventions

Despite the challenges, several interventions have been found to be effective in improving digital literacy in the Global South. These interventions often involve a combination of policy initiatives, community engagement, and international partnerships.

- **Government-Led Programs:** Government initiatives, such as ICT education programs and digital literacy training in schools, have shown promise in several countries. For example, Bangladesh's "Digital Bangladesh" program, which aims to integrate ICT in education and government services, has had some success in improving digital skills among schoolchildren and adults (Saha et al., 2022). Similarly, India's Digital Literacy Mission, launched in 2014, has trained millions of citizens in basic digital skills, with a focus on rural and underprivileged communities (Reddy et al., 2022).
- **NGO and Community-Based Initiatives:** Non-governmental organizations (NGOs) and community-based organizations (CBOs) have also played a critical role in promoting digital literacy. These organizations often target marginalized communities, including women, the elderly, and rural populations, by providing free or low-cost training in digital skills (Liu et al., 2020). For instance, the Barefoot College in India has empowered women, particularly grandmothers, with digital skills through hands-on training and community engagement, thereby fostering greater digital inclusion (Jaffer et al., 2007).
- **Public-Private Partnerships:** Partnerships between governments, private companies, and international organizations have proven to be effective in addressing infrastructure challenges. In some cases, telecommunications companies have worked with governments to provide affordable internet access in remote areas. For instance,

initiatives by mobile network operators in Africa have expanded mobile internet access, facilitating digital literacy through mobile phones (Radovanović et al., 2020).

4.4 Emerging Trends and Future Directions

The literature reveals several emerging trends in digital literacy initiatives in the Global South:

- **Mobile-First Solutions:** With the widespread use of mobile phones in the Global South, mobile-first digital literacy solutions are becoming more prevalent. Many digital literacy programs now prioritize mobile applications and content that can be accessed via smartphones, making it easier for people in underserved areas to participate in training (Saha et al., 2022).
- **Integration of Digital Literacy in Formal Education:** There is a growing recognition of the importance of integrating digital literacy into formal education systems. Several studies emphasize the need for curriculum reforms to include digital literacy as a core subject in schools (Liu et al., 2020). This is particularly relevant in light of the COVID-19 pandemic, which has further highlighted the need for digital skills to access remote education.
- **Focus on Lifelong Learning:** Digital literacy is increasingly seen as an ongoing process rather than a one-time skill acquisition. Lifelong learning initiatives that provide continuous opportunities for digital skills development are gaining traction in the Global South, aiming to ensure that individuals can keep up with the fast pace of technological change (Radovanović et al., 2020).

5. Discussion

The findings of this systematic literature review highlight the complexity and multifaceted nature of digital literacy disparities in the Global South. While significant strides have been made in addressing digital divides, challenges persist due to a combination of socioeconomic, infrastructural, and policy-related barriers. This discussion will explore the implications of these findings, considering the interplay between various factors that shape digital literacy rates and the effectiveness of ongoing interventions.

5.1 Socioeconomic and Demographic Factors

The gendered disparities in digital literacy represent a critical issue in the Global South, where women, particularly in rural and marginalized areas, often face multiple barriers to digital inclusion. Gendered access to ICT tools and training programs significantly limits women's participation in digital economies and their ability to benefit from educational opportunities. Previous studies have identified that targeted interventions, such as ICT training programs for women, can mitigate these barriers (Saha et al., 2022; Reddy et al., 2022). However, these programs remain fragmented and require greater scalability and integration into national education systems. In addition, gender biases in educational and economic opportunities

remain deeply embedded, making it necessary to approach digital literacy efforts with a gender-sensitive lens.

Similarly, the impact of income inequality on digital literacy cannot be overstated. In many regions of the Global South, economic constraints severely limit access to necessary digital tools and infrastructure. Income inequality, coupled with high costs of internet services and mobile devices, further exacerbates the digital divide, leaving the most vulnerable populations behind. This finding aligns with the work of Reddy, Sharma, and Chaudhary (2022), who emphasize the importance of affordable digital tools and internet access as foundational to improving digital literacy. Policymakers must prioritize the removal of these economic barriers to ensure equal access to digital resources.

5.2 Infrastructure and Access

The urban-rural divide remains one of the most significant challenges to improving digital literacy in the Global South. Urban areas generally benefit from better infrastructure, including internet connectivity and access to digital devices. In contrast, rural populations often struggle with poor access to both physical and digital infrastructure. The findings of this review underscore the importance of addressing infrastructure gaps, particularly in rural and underserved regions, to facilitate the widespread adoption of digital literacy programs. Governments and private-sector partners should prioritize investments in rural infrastructure and affordable internet access to ensure equal opportunities for digital skill development (Radovanović et al., 2020; Liu et al., 2020).

The high costs and unreliable connectivity that hinder digital access further exacerbate this divide. Affordable and stable internet access is essential for individuals in the Global South to engage in online learning, digital literacy programs, and access information. The literature suggests that public-private partnerships may play a critical role in reducing the cost of internet access and improving the reliability of services in underserved areas. Additionally, the shift towards mobile-first digital literacy solutions, as seen in initiatives that focus on smartphones as the primary access point for digital tools, offers a promising avenue for overcoming infrastructure barriers (Saha et al., 2022).

5.3 Effective Interventions and Policy Recommendations

Several effective interventions have been identified, particularly those led by governments and NGOs. Government-led programs, such as Bangladesh's "Digital Bangladesh" initiative and India's Digital Literacy Mission, have made notable strides in improving access to digital literacy training. However, these programs must be expanded and integrated more deeply into formal education systems to ensure long-term sustainability. Education systems must incorporate digital literacy as a fundamental component of curricula from an early age, ensuring that students are equipped with the skills necessary to thrive in an increasingly digital world.

Moreover, community-based initiatives and partnerships with NGOs have proven to be effective in reaching marginalized groups, including women, rural populations, and the elderly. These initiatives often provide hands-on training and local support, ensuring that participants not only learn digital skills but also gain confidence in using digital technologies in their daily lives (Liu et al., 2020; Jaffer et al., 2007). As these interventions expand, they must be closely evaluated to assess their long-term impacts on digital literacy rates and their ability to scale across broader populations.

The review also highlights the growing importance of mobile-first solutions, given the widespread use of smartphones in the Global South. Digital literacy programs designed for mobile devices have the potential to reach a large and diverse audience, offering a cost-effective means of bridging the digital divide. Policymakers should encourage mobile-based learning platforms and ensure that digital literacy programs are accessible through smartphones, particularly in low-income areas.

5.4 Future Research Directions

The literature indicates several key areas that warrant further investigation. Future research should explore the effectiveness of mobile-first digital literacy programs in rural and underserved areas, assessing both short-term learning outcomes and long-term impacts on socio-economic mobility. Longitudinal studies are needed to evaluate the sustainability and scalability of digital literacy programs, particularly those initiated by governments and NGOs. Furthermore, more research is required to understand the role of digital literacy in enhancing social inclusion, economic empowerment, and educational opportunities in the Global South.

6. Conclusion

This review has examined the factors influencing digital literacy rates in the Global South, revealing that disparities in digital access and skills are influenced by a range of socioeconomic, demographic, and infrastructural factors. Despite the progress made through government initiatives and community-based interventions, significant challenges remain. Gender inequality, income disparity, and the urban-rural divide continue to hinder digital literacy development across many regions.

However, the findings also highlight effective interventions that have the potential to close the digital divide. Government programs, such as those in India and Bangladesh, have demonstrated success in improving access to digital tools and training, while NGO-led initiatives have made strides in reaching marginalized populations. The emphasis on mobile-first solutions and integrating digital literacy into formal education systems presents promising avenues for future growth.

The need for targeted, inclusive, and scalable policies to address these disparities is urgent. Governments and international organizations must collaborate to reduce the digital divide by addressing infrastructure gaps, providing affordable internet access, and supporting educational

reforms. With continued investment in digital literacy, countries in the Global South can better equip their populations to thrive in the digital economy, contributing to greater inclusion and socio-economic development.

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