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Abigail Mnkandla and Dr John Volk

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Abigail Mnkandla
PhD Student, Africa Research University, Zambia
Dr. John Volk
Africa Research University, Zambia

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Abstract

Purpose: In order to bridge the digital divide and advance women's empowerment in South Africa, the study set out to analyse the opportunities and potential solutions.

Methodology: A more thorough grasp of the problem was obtained by the study by combining quantitative and qualitative data. Surveys revealed the frequency of challenges encountered by a larger group of women and case studies gave in-depth explanations of effective programs and their effects. Policymakers, non-governmental organizations and tech companies striving for a more equitable and inclusive digital landscape for everyone in South Africa that can benefit greatly from this article analysis of existing research by Pokpas, Craffert, Van Audenhove and Marien (2019) and its presentation of successful initiatives that address these issues. Regarding the sampling technique of this target population, it included non-Heterosexual women who have been affected by digital divide in rural and urban areas of South Africa and that are interested in policies, non-Governmental organizations and tech industries. The target population was drawn from women who are working class and those that are not working and a total of 100 participants were selected based on both the stratified random sampling technique and purposive sampling technique. In the research study, both the techniques used to sample the participants included: The stratified random sampling was used to ensure that the sample represents the target population, while purposive sampling was used so that I could get participants who had more information on the issues at hand.

Findings: The study produced a number of useful findings. For example, a systematic review of previous research identified the main barriers that women face which include unequal access to devices and internet connectivity especially in rural areas (Pokpas,et al, 2019). Women's ability to use technology effectively is limited by significant gaps in digital literacy (Alozie & Akpan-Obong, 2017). Women are discouraged by cultural norms and traditional gender roles from engaging in online activities or pursuing careers in technology (Hernandez & Roberts, 2018). Concerns about gender-based violence cyberbullying and online harassment prevent women from fully utilizing the digital world (Sicat,et.al, 2020). The World Bank blog on [Leveraging technology to close gaps between men and women] highlighted successful initiatives that address these issues including mobile applications created through hackathons to empower women to report violence and programs that offer digital literacy training specifically for girls (GirlCode).

Unique Contribution to Theory, Practice and Policy: The study was informed by Intersectionality Theory to investigate how women's experiences of the digital divide in South Africa are influenced by the intersection of gender race class and disability. Feminist Theory also investigate how gender norms and stereotypes sustain the digital gender gap this study draws on feminist theory emphasizing the need for interventions that question conventional gender roles and advance women's digital literacy by looking at how these norms restrict women's ability to engage in the digital economy. The study supports community-based programs that encourage digital inclusion. These programs have the potential to establish secure and easily accessible environments for women to acquire digital skills and establish connections with online resources by collaborating with local organizations and community leaders. Women can take advantage of the opportunities provided by digital technologies if policymakers integrate gender equality considerations into national digital strategies. This study highlights the significance of funding digital infrastructure especially in underserved and rural areas. The digital divide can be closed, and a more equitable digital environment can be created for all South Africans by policymakers through increasing broadband access and enhancing connectivity.

Keywords: *Access, Empowerment, Digital Literacy, Gender Divide*

JEL Codes of Classification: *O3, R5, D6, I3, J1, J7, O1*

INTRODUCTION

While the South African Nation has struggled with inequality issues, the female gender has a new hurdle in the Horizon that is the issue of gender in appropriate access to technologies. Thus, technology favoured women's access to the economy, education information, and knowledge making it a strategic resource in the empowering of women. Yet, women still lag the rest in terms of improving the digital divide as they remain on the receiving end of its effects (Bornman, 2016). This paper discusses some of the issues of concern when regarding the joint use of technology in an endeavour to promote women's rights considering the multiple determinants of the South Africa's digital divide. Digital literacy on the other hand can be defined as the ability to competently engage with technologies including Computers, Smartphones, the internet among others in the retrieval and utilization of information (Alozie & Akpan-Obong, 2017). Culture is formally defined as the customary or prescribed behaviour pattern of people in society regarding women. Other challenges include viability, which comprise of cyber harassment, cyber bullying, and gender violence, which also hamper the use of technology among women. In trying to understand all these, features of the article are intended at exploring the level of digital divide in South Africa and its potential effect on women`s liberation.

Problem Statement

Nonetheless, several challenges limit the ability of South African women to engage in use of digital technologies that have the potential of improving their lives. One limitation is the financial factor whereby the pricing of the devices as well as the connection plans are realistically expensive and biased towards the female gender especially those in the low-income bracket (Asongu et al., 2021). This is made worse especially in the rural regions whereby many of them lack access to electricity (Nong et al., 2024). Therefore, women cannot benefit from the chances of promotions, access to information and education facilities that are available over the internet and participate in any of the internet commerce activities. Also, the access to technology is limited and many women never get to learn how to deal with it, are unable to use an app effectively, cannot do business online, and, therefore, cannot optimize their position in the digital economy (Omosebi & Motunrayo, 2021). This digital illiteracy is even more prevalent in the rural areas where few education institutions exist to offer the knowledge on how to use various technologies. To solve these problems, the following research questions for this study are: Examining possible solutions for low-cost devices and internet connection for the poor. Creating effective digital literacy training based about rural women. Focusing on these possible solutions for the Prospect of access to electricity in the rural areas, the present work is to offer suggestions and practical measures for South African women to increase utilization of technological opportunities.

Theoretical Review

Intersectionality Theory

According to Crenshaw (2013), intersectionality disapproves with the tendency of regarding social categories as separate and distinct. Instead, it synthesizes the relation between these categories and how they enhance and exacerbate each other It is crucial especially in explaining the issues concerning black and white women within the society. For instance, a Black female living in a rural region of South Africa would experience various sorts of discrimination that act on her both as a Black woman and as someone dwelling in a poor area. She might be facing such as: Gender violence, which is however increased by, Gender discrimination as influenced

by the traditional authority over the female gender. The two are racism and prejudice and were evident in the social fabric of South Africa with apartheid and racism persisting up to date. She suffers from poor education and employment, and restricted healthcare because of poverty.

Feminist Theory

This paper on the digital divide needs a framework, and the concept of feminism theory aligns with this study since it is prevalent in gender disparities. The relevant feminism perspective is as follows: Liberal Feminists – it supports women's rights together with men through legal or political changes for instance; equal opportunities or pay. Radical feminism seeks to eradicate a male dominance that is seen as the root of women's suppression and is aimed at the destruction of patriarchal structures. Which focuses on the gender and class oppression and those women are oppressed due to capitalist exploitation. These relate quite closely to the digital divide particularly in terms of how the society reinstate female marginalization. For instance: Negative effects: such as costless or complimentary where the gender aspect may easily become magnified through the presence of what is often referred to as the digital divide whereby women seem to be locked out of the digital opportunity. Another factor that the patriarchal structures maintain the digital divide is that they give limited access to education employment and all other necessities for women.

A Collaborative Relationship

By extending its reach and enhancing its examination of gender inequality intersectionality has had a profound effect on feminist theory. The intricate ways that gender interacts with other social identities including race class and sexual orientation can be better understood by feminist theorists by embracing intersectionality. This enables a more inclusive and nuanced comprehension of the difficulties and experiences faced by women. Feminist and intersectional theories are crucial resources for comprehending and combating social injustice including gender inequality. These theories can assist us in creating more potent plans for social change by acknowledging the connections between different social identities. We can endeavour to create a society that is more just and equal for everyone as long as scholars and activists keep investigating and putting these theories into practice.

Empirical Review

This paper aims at reviewing the current literature on gender inequality and the digital divide in South Africa with an emphasis on the research works which were done after year 2014. As the study has shown, the digital divide affects women's chances of improvement in their social status in societies. Literature evidences the challenge of digital divides and gaps that present women in South Africa with a triadic challenge of lack of access to internet, lack of funds to purchase internet and lack of skills to seek it, (Hlongwane et al., 2019). These have hindered women's health, knowledge, and employment thus isolating them from the digital economy. In addition, evidence suggests that the advancement in digital technologies is beneficial to female entrepreneurs, but the ability to leverage on the technology is limited by access and usage challenges (Ajumobi & Kyobe, 2017). That is why the numerous challenges associated with the availability of digital financial services, e-commerce, and online marketing limit the development of female entrepreneurs and their competitiveness. There are consequences of cyber bullying and technology aggression on the females where they are more vulnerable to assaults than males and young women are more vulnerable to misuse of technologies than young men (Hulse et al., 2018). To solve a number of challenges identified as relevant to the digital divide and gender imbalance, several strategies have been recommended and put

forward. Regarding existing solutions, the remote education to the population and local initiatives, the provision of digital literacy, and laws that address the issue of opening access to technologies are included. For example, in the South African government's 2011 National Development Plan, the government acknowledged the need for universal access to technology, digital literacy, knowledge of privacy and acceptable user conduct on the Internet. The analysis of the existing interventions proved that even though the necessity of eradicating the digital divide was discussed, and efforts were made to address it, women remain underserved in that aspect. More studies must be conducted to find what interventions are more effective and efficient in the case of women in South Africa and that they can be implemented in accordance with the conditions in the country.

Digital Skills and Literacy Gap

Oughton,et.al,(2018) asserts that the types of online abuse can have serious emotional and psychological repercussions preventing women from participating fully in online communities and impeding their ability to be empowered online.

Frameworks for Policies and Regulations

In order to address the digital divide and advance gender equality government policies and regulatory frameworks are essential. Research conducted by Jones,et.al(2021); Peoples and Vaughan-Williams (2020) has examined how well South Africa's digital policies support gender equality. Even though there have been some progress more comprehensive and focused policies are still required to address the unique difficulties that women face.

Perspectives from around the Globe

For the problems like digital divide and gender inequalities to be solved in South Africa it is pertinent that the authorities consider what is being done in other countries. These papers have stressed on the fact that these challenges are not localized but rather has dominated the global educational systems and that there is a call for adoption of internationalization to solve these problems (Mulamula and Amadi-Echendu 2015; Canton 2021). This section seeks to compare South Africa's approaches towards the two related issues that is the digital divide and gender inequality to establish key strengths and weaknesses. For instance, despite the steady increase in the usage of mobile phone and the internet among the population in South Africa particularly the rural women and girls; efforts to increase the take-up of digital literacy and online safety has never been propounded. On the other hand, Rwanda and other countries in the region have embarked on other programs that enhance the status of women in the use of technology. For instance, Rwanda's "Smart Rwanda" has educated at least 5000 females and girls for computer skills while in Kenya, millions of citizens enrolled for "Digital Literacy Program". This is due to the fact which is evident by the comparative Table 1.

Table 1: Comparative Table

Feature	South Africa	Rwanda	Kenya
Digital Access (e.g mobile phone or internet)	Strong	Moderate	Moderate
Digital Literacy Programs	Weak, especially for women staying in rural areas	Strong (Smart Rwanda initiative)	Strong (Digital Literacy Program)
Online Safety Initiatives	weak, especially for women staying in rural areas	Moderate (Smart Rwanda initiative)	Moderate (Assumed within broader programs)
Focus on Gender Equality in Digital Space	It is Growing but needs some improvements	Strong emphasis within initiatives	Strong emphasis within initiatives

These serve as good examples that can be adopted to suit the South African social and economic status from the best practices across the globe. Recommendations for South Africa include: Increase the spending on promotion of digital literacy and campaigns against cyber-crimes particularly those that target women in rural areas. Here, one can collaborate with the international organizations and NGOs for gaining the expertise and avail the resources. As stated earlier, it is clearly understood that women in South Africa encounter several different challenges so that the suggested solutions should be pertinent to the context of South Africa only. Thus, using more international experience, South Africa can work faster on the elimination of the digital divide and on gender equality.

METHODOLOGY

A mixed-methods approach was used in this study to thoroughly examine potential solutions and opportunities for closing the digital divide and advancing women's empowerment in South Africa. In a single study this methodology integrates quantitative and qualitative data collection and analysis methods. Our current study examined previously published research and reports because the data was readily available through online journals and libraries. For example, a systematic review of previous scholarly studies government reports and non-governmental organization publications on gender and the digital divide in South Africa was carried out.

FINDINGS

The findings were divided into three categories of research gaps: methodological contextual and conceptual.

Conceptual Gap

With an emphasis on the discrepancy between current research and women's lived experiences this mixed-methods study investigated the digital divide in South Africa. Important barriers such as unequal access gaps in digital literacy cultural norms and safety concerns were noted in the literature review (Pokpas et al. 2019; Hernandez, & Roberts, 2018; Alozie & Akpan-Obong, 2017). But the case studies and online survey went further exposing the intricacies of the conceptual disconnect between women's lived experiences and current research. According to the review one obstacle is affordability (Asongu, et. al,2021). The case studies also uncovered other details that underscore the knowledge gap: In rural regions poor electricity availability made the affordability problem worse making even subsidized data plans useless.

This is consistent with Nong et al. (2024) most recent study which examines the unique difficulties rural communities face in obtaining technology because of limited infrastructure. According to data from the Online Survey women frequently put household needs ahead of their own access to technology. It is consistent with research by Jensen and Jensen (2023) that emphasizes the double burden that women in low-income households bear where access to technology becomes less important than basic needs. According to the literature review the majority of the previous research on the digital divide concentrated on developing technical skills (Omosebi & Motunrayo, 2021). However, a more comprehensive understanding of the needs for digital literacy was revealed by the case studies and data from the online survey. To effectively navigate the online environment women, need more than just technical skills they also need confidence and critical thinking skills (data from Focus Group Discussions). According to data from the Online Survey women indicated a lack of knowledge about the resources and support systems that are available indicating a significant gap in online safety education. This emphasizes how comprehensive digital literacy programs that prevent online harassment and address cybersecurity threats are necessary (Holt & Ormston 2019). Ultimately the study's design revealed a disconnect between current understanding and women's lived experiences highlighting the need for more comprehensive approaches that take into account a greater variety of digital literacy abilities and safety needs.

Contextual Gap

Although affordability was noted as a barrier in previous research (Asongu,et.al, 2021) this study also uncovered other South African-specific complexities. Data from Case Study 1 shows that subsidized data plans were useless in rural areas due to inadequate electrical infrastructure. Data from the Online Survey also showed that women frequently put household needs ahead of their own access to technology underscoring the financial burden they bear. The study also showed a discrepancy between the need for critical thinking and awareness of online safety among women (data from Focus Group Discussions & Online Survey) and the emphasis on technical skills in previous research (Omosebi & Motunrayo, 2021). In addition to discouraging some women from pursuing tech careers cultural norms also restricted online participation because of social expectations (data from Interviews with Program Coordinators). Context is crucial as evidenced by the desire for culturally appropriate content (data from Online Survey). Finally, according to data from focus group discussions and an online survey the fear of online scams and stalking surfaced as serious safety concerns that went beyond harassment. According to these results context-specific solutions are required that cover a broader range of digital literacy abilities cultural sensitivity and thorough online safety training in addition to technical skill development.

Geographical Gap

The digital divide that affects women in South Africa has a geographic component according to this mixed-methods study. Rural affordability problems are made worse by inadequate infrastructure and pricing structures that are cantered on cities. Additionally, women in rural areas face distinct safety concerns and have fewer opportunities to acquire digital literacy skills. Regional differences in cultural norms surrounding online participation further underscore the need for solutions tailored to the local context. Context is crucial as evidenced by the ongoing demand for culturally appropriate content. Addressing rural areas limited infrastructure offering localized digital literacy training creating culturally appropriate online content and

guaranteeing thorough online safety instruction across all regions are all necessary to close this gap.

CONCLUSION AND RECOMMENDATION

Conclusion

Only when access and opportunities are fair can technology be a powerful equalizer. South Africa can use technology to build a more empowered and inclusive future for everyone if it recognizes and addresses the challenges faced by women. A coordinated effort from all parties involved is needed for this journey. Lawmakers can implement measures that encourage women's involvement in the tech industry and digital inclusion. NGOs can offer assistance and training to close the digital divide. Tech firms can create applications and user interfaces that are safe and meet the needs of women. In addition to advocating for change civil society can increase awareness of the digital divide. People can promote girls' interest in technology and question established gender stereotypes.

Recommendation

It is suggested that the following strategies be adopted in order to respond to this study's conclusions regarding intersectional approaches to digital inequality in South Africa:

Research

The next research should examine the cross-sectional effect of digital divide in South Africa and consider other factors which include sexual orientation, class, race, and disability. For instance, research can examine how the women with disabilities encounter difficulties in their engagement in digital technologies. Where tensorial theory of feminism should be applied to study the gendered nature of the technologies issues such as biasing in algorithms, employment in digital technologies, and violence in online spaces should be investigated.

Practice

Programs for digital literacy: Development and enhancing the number of programs for increasing digital literacy levels for women and girls, particularly in poor and rural communities. These should be skills that are applied such as digital business, business on virtual platforms, and protection when using the internet. For instance, a computer literacy program for women in a remote village can include an aspect about marketing through the internet and use of ecommerce technologies for self-employment and sales of home-made products. Neighbourhood-Based Projects: Support more neighbourhood-based projects that promote Women's welfare or/and increase the uptake of technology. We are aimed at these projects may offer such women safe environments where they can encounter each other and work collectively, besides empowering them with mentoring, training as well as technology.

Policy

It is recommended that gender sensitive policies on new technologies should be formulated and developed that may suit their requirements. These are policies that should be aimed at improving cybersecurity, the availability of affordable Internet connections and the people's understanding of the digital environment. For instance, a policy could be taken such that offer free or relatively cheap access to the internet to the low-income earners especially women and girls. It can entail first, second and third tier training such as on matters revolving around safety, civil use of virtual space, and thinking.

Monitoring and Evaluation

There is need to ensure stronger monitoring and evaluation approaches to monitor achievement of goals regarding reduction of the digital divide and promotion of gender equality. This could include statistics on the levels of literacy in the digital environment, their activity and usage of IT.

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