

HOW CAN DIGITAL EQUITY INITIATIVES ADDRESS GENDER DISPARITIES IN ACCESS TO TECHNOLOGY AND KNOWLEDGE?

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ABSTRACT

Persistent gender disparities in access to technology and knowledge remain a critical barrier to achieving inclusive participation in the digital age. While global initiatives have increasingly emphasized digital equity as a cornerstone of sustainable development, the uneven distribution of technological resources continues to enable existing social disparities. This study interrogates how digital equity initiatives can be strategically designed to address gender disparities, situating the discussion within broader debates on social inclusion, post-colonial contexts and educational leadership. Drawing on intersectional perspectives, the analysis foregrounds the ways in which gender interacts with socio-economic status, geography, and cultural norms to shape unequal opportunities in digital ecosystems. The study examines structural challenges such as affordability, infrastructure gaps, and policy gaps, alongside cultural barriers including gender stereotypes and limited representation in digital spaces. It highlights promising strategies, including targeted digital literacy programs, inclusive curriculum design, and gender-sensitive policy frameworks that prioritize inclusion of marginalized voices. Particular attention is paid to the role of educational institutions and leadership models in embedding equity principles into digital transformation agendas. The discussion also considers how sustainability frameworks, notably the Sustainable Development Goals (SDGs), provide normative anchors for integrating gender equity into digital inclusion policies. By moving beyond access to encompass agency, empowerment, and redistribution of knowledge, digital equity initiatives can challenge entrenched biases and foster meaningful participation. Ultimately, there is need for systemic approaches that combine technological innovation with critical pedagogy and policy reform, ensuring that digital transformation contributes to Both Gender Justice and Broader Social Inclusion.

Keywords: Gender equity, disparities, stereotypes, leadership, gender, sustainability and critical pedagogy.

INTRODUCTION

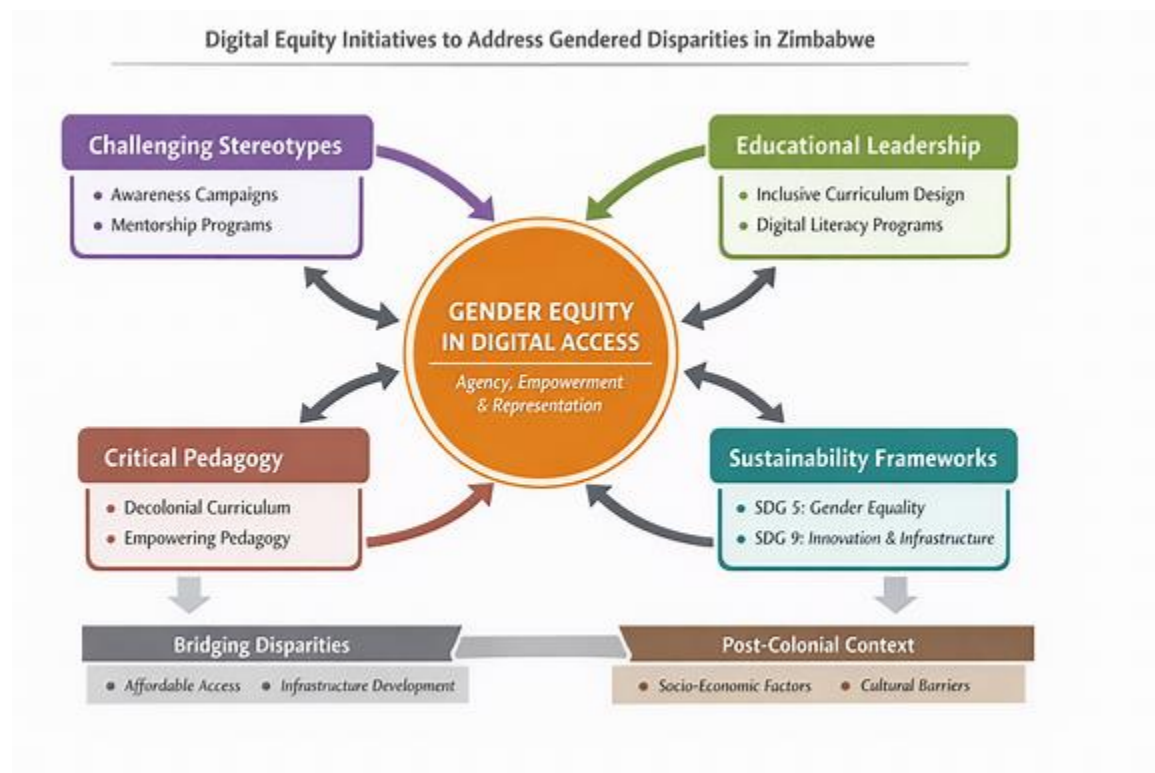
Persistent gender disparities in digital access remain a pressing challenge across Africa, particularly in Zimbabwe where socio economic inequalities and cultural stereotypes continue to shape women's engagement with technology. Feminist perspectives on digital equity show that access alone is insufficient, agency, empowerment and representation must also be considered [1]. Studies in Zimbabwe reveal that while mobile telephone penetration has increased, women's use of digital tools often remains limited to passive communication, with inadequate opportunities for innovation or computational thinking. These realities underscore the need to interrogate how digital equity initiatives can overturn hierarchies and foster inclusive participation in the digital age [2].

Stereotypes and cultural norms further exacerbate disparities, restricting women's ability to fully participate in digital ecosystems [2]. Research in Harare demonstrates that socio-economic determinants, infrastructural gaps and persistent gender assumptions continue to marginalise women to ICT access and use. Leadership within educational institutions and policy frameworks plays a pivotal role in challenging these barriers. By embedding gender -sensitive approaches into digital transformation agenda, leaders can disrupt exclusionary practices and promote equity [3]. Feminist critiques emphasize that digital equity must be situated within broader post- colonial debates, recognizing how historical legacies intersect with contemporary inequalities in Zimbabwe and across Africa.

Sustainability frameworks particularly the sustainable Development Goals (SDGS) provide normative anchors for integrating gender equity into digital inclusion policies [4]. Critical pedagogy offers transformative lens enabling educators and policy makers to interrogate power relations and foster inclusive learning environments. Recent scholarship on African education system calls for decolonial approaches that align pedagogy, technology and equity to address systemic disparities. In Zimbabwe, feminist informed strategies such as targeted digital literacy programs, inclusive curriculum design and gender sensitive policy reforms have shown promise in advancing equity. By combining technological innovation with critical pedagogy and systemic reform, digital transformation can contribute not only to gender justice

but also to broader social inclusion and sustainability. The diagram below illustrates gender equity initiatives to address gender disparities [5].

GENDER EQUITY INITIATIVES: Figure 1.



Digital equity initiatives in Zimbabwe, as illustrated in the framework, emphasize the need for multidimensional strategies to address persistent gender disparities in digital access. Central to this model is the pursuit of gender equity in digital access, framed around agency, empowerment, and representation. The diagram above (Figure (1)) highlights how challenging entrenched stereotypes through awareness campaigns and mentorship programs is essential for shifting social perceptions that restrict women's participation in digital spheres. Complementing this, educational leadership particularly through inclusive curriculum design and targeted digital literacy programs serves to build the foundational skills and confidence necessary for women and girls to engage meaningfully with digital technologies. Together,

these interventions work to overturn structural and cultural barriers that disproportionately affect women.

The framework also situates gender digital equity within broader socio-political and developmental contexts. Critical pedagogy, including decolonial curriculum reforms and empowering educational practices, challenges the legacy of post-colonial inequalities, ensuring that digital inclusion efforts do not replicate historical power imbalances [6]. Moreover, sustainability frameworks aligned with global goals, such as SDG 5 (Gender Equality) and SDG 9 (Innovation and Infrastructure), underscore the importance of integrating gender considerations into national development agendas.

Feminist theorists argue that digital inequity is rooted not only in material barriers but also in cultural norms, gendered stereotypes, and historical exclusion issues that critical pedagogy likewise seeks to expose through reflective and dialogic learning [7]. Additionally, both frameworks emphasize agency and empowerment: critical pedagogy advocates for learners to become co-creators of knowledge, while feminist digital equity initiatives seek to equip women with the skills, confidence, and autonomy necessary to navigate and shape digital environments. In this way, integrating critical pedagogy within feminist approaches strengthens efforts to build digital systems and educational spaces that are equitable, culturally responsive, and transformative.

Finally, the model acknowledges that bridging digital disparities requires addressing practical barriers such as affordability and infrastructure deficits while being attentive to socio-economic conditions and cultural norms [8]. In doing so, it presents a holistic approach that recognizes gender digital equity as both a technological and socio-cultural imperative.

Feminist Theory and Patriarchal Systems

Feminist theory critiques patriarchal systems that perpetuate gender disparities in access to digital technologies. In Zimbabwe, patriarchal norms continue to shape women's opportunities, limiting their ability to engage with ICT's and digital knowledge economies. Research in Harare shows that socio economic determinants and cult ^[9].

Bhattacharya (2026)^[10] argues that feminist perspectives emphasize dismantling these structures by foregrounding women's agency, justice and empowerment in digital equity initiatives. This critique is vital. Zimbabwe is a country dominated by patriarchal systems intersected by poverty and infrastructural deficits which leads to exclusion in digital knowledge and use.

Digital Exclusion as Gendered Power Relations

Digital exclusion is not merely a technical gap but a reflection of deeper gender power relations. Studies in rural Zimbabwean communities ^[11] reveal that women face intersecting barriers that is limited infrastructure, socio-economic constraints and cultural restrictions that reinforce marginalization. Feminist theory frames these exclusions as manifestations of unequal power where access to digital tools becomes a site of contestation over autonomy and representation. Bhattacharya (2026) ⁽¹⁰⁾ emphasize that addressing digital inclusion requires more than providing devices, it demands structural transformation that challenges patriarchal control over knowledge and resources.

Feminist approaches to digital equity initiatives in Zimbabwe underscore the importance of empowerment, justice and agency. Bridging the digital divide requires interventions that prioritise women's voices and lived experiences ensuring that technology serves as a factor for liberation rather than reinforcing dependency ^[2]. For example, community based digital literacy programs in Zimbabwe have shown promise in enabling women to participate more fully in civic and economic life. By centering feminist principles, digital equity initiatives can transform exclusion into empowerment, creating pathways for women to assert agency in

knowledge production and technological innovation. This aligns with previous observations [10] that feminist informed strategies are essential for achieving justice in digital spaces.

Feminist theory reveals that digital exclusion in Zimbabwe is anchored on patriarchal power relations. Addressing these disparities requires initiatives that anchors women's empowerment, justice and agency ensuring that digital equity becomes a transformative force rather than a superficial fix.

Purpose

The purpose of this research was to critically assess the gendered dimensions of digital exclusion among women in rural and urban Zimbabwe and to analyze how existing national ICT policies address these inequalities.

Aim

The study sought to assess the structural, cultural, and infrastructural barriers that continue to marginalize rural women despite the country's adoption of progressive digital policies. By applying a feminist and intersectional framework, focused on uncovering how factors such as class, geography, age, and disability intersect to shape women's access to, use of, and agency within digital technologies.

Objectives

1. To assess how structural, cultural, and infrastructural barriers contribute to continued digital exclusion of rural and urban women in Zimbabwe, despite the presence of national ICT policies that promote universal access.
2. To assess the extent to which the National ICT Policy (2021) interrogates feminist and intersectional perspectives, particularly regarding the differentiated challenges faced by women based on class, geography, age, and disability.

Problem Statement

Despite Zimbabwe's adoption of progressive ICT policies, digital exclusion remains deeply entrenched among rural women due to intersecting structural and cultural barriers. While the National ICT Policy (2021) promotes universal access, it lacks a feminist-informed framework that addresses the unique challenges faced by women based on class, geography, age, and disability. This omission perpetuates patriarchal norms and infrastructural deficits that disproportionately affect rural communities.

Recent studies reveal that rural Zimbabwean women are excluded not only by poor connectivity and limited electricity, but also by restrictive gender roles that limit their autonomy in technology use ^[11]. Furthermore, without an intersectional lens, digital resilience policies risk reinforcing systemic inequalities rather than dismantling them ^[12]. Feminist theory emphasizes that digital equity must go beyond access and include agency, representation, and justice – principles currently absent in Zimbabwe's digital strategy.

Questions

1. How do structural and cultural barriers intersect to shape digital exclusion among women in Zimbabwe?
2. To what extent does Zimbabwe's National ICT Policy (2021) address the intersectional needs of women?
3. What feminist-informed strategies can promote agency, representation, and justice in digital inclusion for marginalized women?

Methodology

This study adopted a qualitative research design grounded in feminist and intersectional frameworks to explore how rural Zimbabwean women experience digital exclusion. Qualitative methods were used to capture the lived experiences, narratives, and agency of marginalized groups, allowing for nuanced insights into how structural and cultural barriers intersect. Data was collected using semi-structured interviews with women from diverse rural communities, ensuring representation across age, class, and disability categories. Reflexivity

and positionality were central, acknowledging the researcher's role in shaping knowledge production and ensuring ethical engagement with participants [13]. Data was analysed using thematic coding to identify recurring patterns of exclusion and empowerment, guided by feminist principles of justice and representation. This approach aligns with recent scholarship emphasizing the importance of intersectionality in qualitative inquiry to uncover overlapping disadvantages in African contexts [14]. By situating women's voices at the center, the methodology ensures that findings contribute to both academic debates and practical interventions in Zimbabwe's digital inclusion policies.

LITERATURE REVIEW

Structural Barriers in Rural and urban Digital Access

Recent scholarship emphasizes that rural Zimbabwean communities continue to face persistent infrastructural deficits that hinder digital inclusion. Sullivan-Daly et al. (2023) [11] conducted a scoping review mapping the digital divide in rural Zimbabwe, showing that poor connectivity, unreliable electricity, and limited ICT infrastructure remain critical obstacles. These deficits disproportionately affect women, who often lack access to devices and affordable data, reinforcing systemic exclusion. The review highlights that without targeted interventions, rural women remain marginalized from digital opportunities, perpetuating socio-economic inequalities.

Structural barriers to urban digital access in Zimbabwe extend beyond infrastructural and economic constraints to include significant gender-based disparities [15]. While cities like Harare have higher connectivity than rural areas, women in urban low-income and peri-urban communities remain disproportionately excluded from full digital participation. Research shows that women in Harare are 20–30% less likely than men to own smartphones, regularly use mobile internet, or engage meaningfully with digital technologies, largely due to affordability challenges, limited digital literacy, and concerns about online safety. These gender related obstacles intersect with broader structural issues such as high data costs, unreliable power supply, and inadequate ICT infrastructure planning, all of which constrain

equitable access for marginalised groups. To stay connected for an entire month in Zimbabwe, an individual needs to spend over US\$30 on mobile data while households that install wi-fi often pay more than US\$50 per month. These costs are prohibitively high for many ordinary Zimbabwean women especially those who rely on informal trading, are unemployed or live below the poverty datum line. As a result, such financial barriers continue to deepen gender disparities in digital access for women in both urban and rural areas ^[16].

Institutional limitations further reinforce both general and gender-specific digital exclusion in urban Zimbabwe. Weak policy coordination and fragmented implementation undermine efforts to expand inclusive digital access in cities. Studies on digital transformation in Zimbabwean local governments highlight persistent structural challenges such as infrastructure deficits, limited financial resources, and weak institutional capacity that restrict widespread ICT adoption. When combined with gendered social inequalities, these systemic barriers make it harder for women to benefit from digital services in education, employment, entrepreneurship, and civic participation ^[16]. Addressing these challenges requires not only investment in urban ICT infrastructure but also gender-responsive digital inclusion strategies that improve affordability, enhance digital literacy for women, strengthen online safety protections, and ensure coordinated policy action across institutions

Gender and Cultural Restrictions

Beyond infrastructure, cultural norms play a decisive role in shaping women's access to technology ^[9]. Studies reveal that patriarchal household dynamics restrict women's autonomy, with men often controlling financial resources and technology use. A 2021 analysis of gender differences to ICT access observed that women in both rural and urban Zimbabwe face greater barriers in device ownership, digital literacy, and affordability compared to men ^[17]. These findings underscore how cultural expectations intersect with economic constraints, creating compounded exclusion for rural women.

Policy Gaps and Feminist Critiques

Although Zimbabwe's National ICT Policy (2021) promotes universal access, feminist scholars argue that it lacks an intersectional lens. Mweha (2025)^[12] critiques Zimbabwe's digital resilience policies, noting that without feminist-informed frameworks, they risk reinforcing inequalities rather than dismantling them. His work on decolonizing digital resilience highlights the need for transformative, gender-responsive social protection policies that address systemic inequalities and digital divides. This critique aligns with broader feminist theory, which insists that digital inclusion must encompass agency, representation, and justice, not just access.

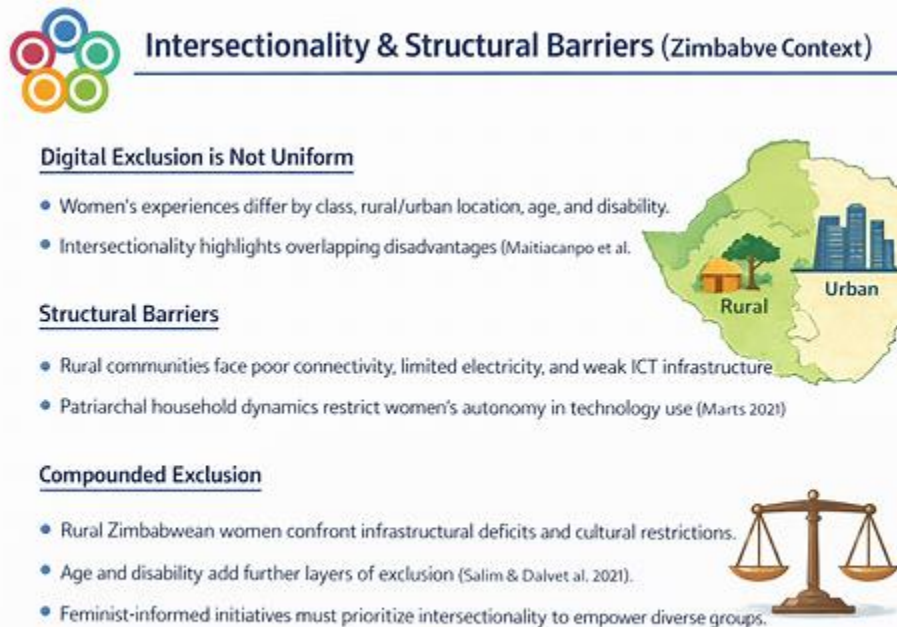
Intersectionality and Emerging Approaches

Intersectionality has become a central analytical tool in recent African scholarship, emphasizing how class, geography, age, and disability intersect with gender to deepen exclusion. Sullivan-Daly et al. (2023)^[11] argued that intersectional approaches are essential to uncover overlapping disadvantages in rural Zimbabwean communities. This perspective resonates with global feminist debates that call for participatory, qualitative research methods to center women's voices and experiences. By situating rural women's narratives within intersectional frameworks, scholars highlight the urgency of designing policies that move beyond one-size-fits-all solutions and instead prioritize context-specific empowerment strategies.

Rural Zimbabwean communities continue to face persistent infrastructural challenges that severely limit digital inclusion. Sullivan-Daly et al. (2023)^[11] observed that poor connectivity, unreliable electricity, and weak ICT infrastructure remain widespread, creating systemic barriers to participation in the digital economy. These deficits not only hinder access to online services but also exacerbate existing inequalities by isolating rural populations from educational, economic, and social opportunities. The lack of reliable infrastructure thus forms the foundation of digital exclusion, disproportionately affecting women who already face

multiple layers of disadvantage (Policy.O.P.G, 2024). Their situation is clearly outlined in the diagram presented below (figure 2):

Figure 2.



The diagram clearly illustrates the divide between rural and urban women, highlighting the structural barriers that contribute to digital exclusion. The weighing scale in the diagram symbolizes the imbalance in digital access, affordability and utilization across these communities. When measured, these factors do not align evenly thereby revealing significant inequities in how technology is experienced and accessed. When infrastructural deficits and cultural restrictions intersect, they create a compounded form of digital exclusion. A rural woman may be willing and capable of engaging with technology, but without electricity, internet, or social permission, she remains excluded. Multiple layers of disadvantages geography, gender, class, and age – combine to deepen exclusion. Addressing this requires not

just technical solutions, but feminist-informed strategies that empower women and challenge the norms that hold them back.

Evolution of ICT Policies in Zimbabwe and Southern Africa

ICT policy development in Zimbabwe and across Southern Africa has been shaped by efforts to bridge the digital divide, often focusing on infrastructure expansion, mobile penetration, and economic modernization. Early initiatives emphasized connectivity and e-governance, but they rarely addressed the structural inequalities that limit women's participation. For example, Mare (2021)^[18] observed that while technologies offer opportunities for marginalized communities, access remains limited to passive mobile phone use, with inadequate digital skills training for women and girls in STEM fields. This reflects a broader regional trend where ICT policies prioritize economic growth over social equity.

Gender Blind Spots

Despite progress in ICT adoption, gender has often been sidelined in national digital strategies. These blind spots reinforce patriarchal systems by failing to recognise women's unique barriers to digital participation. In Zimbabwe, policies have historically overlooked the intersection of gender, poverty and rural marginalisation resulting in uneven access to digital resources. Regional strategies such as the Southern African Development Community (SADC) ICT frameworks, similarly, emphasise competitiveness and innovation but lack explicit gender sensitive approaches. Such an omission perpetuates digital exclusion as a reflection of deeper gendered power relations, aligning with the feminist theory's critique of patriarchal policy environments.

Zimbabwe National ICT Policy (2021)

The Zimbabwe National ICT Policy (2021) acknowledges digital inclusion as a national priority but does not fully integrate feminist perspectives on equity. While the policy promotes universal access and digital literacy, it frames inclusion in general terms without addressing the specific socio-cultural and economic barrier faced by women. This limits the policy's transformative potential, as it risks reinforcing existing inequalities rather than overturning

them ^[18]. Feminist informed approaches would demand explicit commitments to women's empowerment, agency and justice in ICT strategies. They ensure that digital equity initiatives go beyond technical fixes to challenge structural gendered exclusions. Therefore, gender exclusion is not accidental but rooted in policy blind spots and patriarchal structures.

RESULTS

Structural Exclusion

Results show that rural women in Zimbabwe remain digitally excluded due to persistent infrastructural challenges. As Sullivan-Daly et al. (2023)^[11] noted, poor connectivity, unreliable electricity, affordability and weak ICT infrastructure continue to undermine access to digital technologies in rural communities. These structural deficits not only limit opportunities for education, employment, and social participation but also reinforce existing inequalities by isolating rural women from broader national and global digital networks. The lack of reliable infrastructure thus forms a critical barrier to inclusion.

Device Ownership and Affordability

Another key finding is that women are disproportionately affected by gaps in device ownership and affordability. Men are more likely to own mobile phones and have consistent access to digital resources, while women often rely on shared devices or lack access altogether. This disparity is compounded by economic constraints, as women in rural areas typically have lower incomes and less financial autonomy, making it difficult to afford data bundles or maintain devices ^[16]. These affordability challenges deepen the digital divide and limit women's ability to participate meaningfully in the digital sphere.

Patriarchal Household Dynamics

Results of this study also highlight the role of patriarchal household dynamics and restrictive gender norms in reinforcing exclusion. According to *Digital Inclusion & Social Inequality* (2021) ^[17], men often control financial resources and decision-making within households, limiting women's autonomy in technology use. This dynamic embeds gender power relations into

everyday access to digital tools, ensuring that women's participation remains secondary. Cultural expectations that prioritize male authority further restrict women's ability to engage independently with digital technologies, compounding structural barriers. Additionally, the 'second shift' that women shoulder at home further exacerbates digital inequality. Ongoing household responsibilities leave many women limited time to explore or engage with digital technologies.

Compounded Exclusion

Taken together, these structural and cultural barriers create a compounded form of exclusion for rural women in Zimbabwe. The intersection of infrastructural deficits, affordability gaps, and patriarchal norms produces overlapping disadvantages that cannot be addressed through one-dimensional solutions. Instead, the findings underscore the need for intersectional and feminist-informed approaches that recognize the complexity of rural women's experiences. Without such frameworks, digital inclusion policies risk reinforcing inequalities rather than dismantling them, leaving rural women marginalized in the digital age.

CONCLUSION

This study concludes that both urban and rural women in Zimbabwe remain disproportionately marginalized in the digital sphere due to intersection of structural deficits, affordability gaps, and patriarchal household dynamics. Persistent infrastructural challenges such as poor connectivity, affordability, unreliable electricity, and weak ICT systems continue to undermine access, while economic inequalities limit women's ability to own and maintain digital devices (Sullivan-Daly et al., 2023)^[11]. Cultural and gender norms further restrict women's autonomy, embedding exclusion within household decision-making and reinforcing systemic inequalities^[17]. Taken together, these findings demonstrate that digital exclusion is not a singular issue but a compounded phenomenon, shaped by overlapping disadvantages across geography, class, and gender. Addressing this exclusion requires feminist-informed, intersectional approaches that prioritise agency, representation, and justice, ensuring that digital inclusion policies move beyond access to embrace empowerment and equity. By

situating women's voices at the center of analysis, this study contributes to both academic debates and practical strategies for building inclusive digital futures in Zimbabwe.

RECOMMENDATIONS

There is need to;

1. Strengthen ICT infrastructure in Rural areas, reliable electricity, affordable internet connectivity and community ICT hubs for women in rural and urban areas to reduce infrastructural deficits that perpetuate exclusion.
2. Promote affordable access to devices and Data, introduce subsidies for women, community based device-sharing programs to ensure digital ownership by women.
3. Integrate feminist informed frameworks into ICT policies to explicitly address intersectional challenges faced by rural women to ensure inclusivity.
4. Challenge Patriarchal Household Dynamics through awareness Campaigns.
5. Provide targeted training in rural communities to build women's confidence and skills in using digital technologies ensuring they can participate meaningfully in education, business and governance.

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