Centre for MultiLateral Affairs

Beyond Basic Access: Mapping Solutions to the Emerging Digital Participation Gap

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Abstract

This report presents the framework and anticipated outcomes of a qualitative study exploring barriers and solutions to meaningful digital participation in Uganda, focusing on "barely online" users individuals with nominal internet access but constrained engagement.

The research, conducted in Wakiso and Mukono districts, applies a mixed-methods approach with a strong qualitative emphasis, involving 6 focus group discussions and 18 key informant interviews with community members, ICT practitioners, civil society actors, and local government representatives. The findings indicate that high costs of devices and data, rural connectivity gaps, limited digital literacy, and entrenched gender norms significantly limit equitable access. The gender digital divide is reinforced by online harassment and cultural biases that prioritize men's access to technology. Digital exclusion is further compounded for those facing overlapping vulnerabilities such as poverty, disability, and rural residence.

Weak policy frameworks, poor enforcement of digital rights protections, and restrictive legal environments also hinder safe and meaningful participation. Therefore, from the study we conclude that digital inclusion in Uganda is shaped by intertwined economic, cultural, and political factors, requiring a coordinated, rights-based response. To address these challenges, there is a pressing need for government led educational initiatives that inform the public about existing laws and their implications. This includes simplifying the legal language surrounding digital privacy, strengthening enforcement mechanisms through targeted training of duty bearers. Furthermore, there is need to update existing legal frameworks to keep pace with advancements in technology, like AI and machine learning. Finally, promoting community-driven initiatives, such as affordable access to technology and resources will also play a critical role in bridging the digital divide and ensuring that all individuals are empowered to navigate the digital landscape safely and efficiently.

Keywords:

• Digital inclusion	• Digital Literacy
• Uganda	• Community Networks
• Gender digital divide	• Policy Advocacy
• Rural connectivity	

Contents

INTRODUCTION

1

1.1 Introduction

The digital revolution has fundamentally reshaped social, economic, and political life across the world. Over the past two decades, global efforts to expand internet connectivity have been celebrated as a critical pathway to inclusive development, with digital platforms enabling new forms of trade, communication, learning, and governance.

However, while the early framing of the "digital divide" emphasized the gap between those with and without internet access, more recent scholarship cautions that access alone is insufficient to ensure meaningful participation[1,2].

What has emerged is a new form of inequality the "digital participation gap" which highlights the experiences of individuals who are nominally online but are unable to effectively leverage digital systems due to structural and contextual barriers.

This participation gap is especially evident in low- and middle-income countries, where rapid gains in connectivity often mask deeper exclusions. Sub-Saharan Africa, for example, has recorded one of the fastest increases in mobile internet penetration, yet meaningful use remains uneven. Many users rely on basic handsets, purchase only minimal data bundles, or access the internet sporadically in ways that limit engagement with digital platforms for education, finance, or civic participation[3]. High costs of data, limited access to affordable devices, low digital literacy, and weak institutional frameworks continue to undermine the promise of the digital economy. Scholars argue that this situation risks producing a two-tiered digital society where a minority can fully exploit digital opportunities, while a majority remain at the margins of meaningful participation[4].

Uganda presents a compelling case for studying this emerging phenomenon. The country has made notable progress in expanding internet infrastructure, with mobile networks covering most urban and peri-urban areas. The Uganda Communications Commission (UCC) estimates that internet penetration now exceeds 60%[5]. Yet, behind these numbers lies a more complex reality. The majority of users are concentrated in Kampala and a few urban centers, while peri-urban and rural populations often face patchy coverage, prohibitive data costs, and insufficient access to reliable devices. Even among those who are "connected," levels of digital literacy and effective engagement with online services remain low, raising questions about the inclusivity of Uganda's digital transformation agenda.

The challenges of digital participation are not evenly distributed across society. Research highlights that women, youth in informal employment, low-income households, and residents of rural-urban interface communities are disproportionately affected[6]. For instance, women are more likely than men to share mobile devices within households, limiting privacy and autonomy in online use. Young people in

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1 *Donner, J. (2021). After access: Inclusion, development, and a more mobile Internet. MIT Press.*

2 *Van Dijk, J. (2020). The digital divide. Polity Press.*

3 *World Bank. (2021). World development report 2021: Data for better lives. World Bank. https://doi.org/10.1596/978-1-4648-1600-0*

4 *Lythreatis, S., Singh, S. K., & Abdul-Nasser, A. (2022). Towards digital economy: The impact of digitalization on e-commerce. Journal of Business Research, 146, 606–615. https://doi.org/10.1016/j.jbusres.2022.03.063*

5 *Uganda Communications Commission (UCC). (2023). Market performance report 2023. Uganda Communications Commission. https://www.ucc.co.ug*

6 *GSMA. (2022). The mobile gender gap report 2022. GSM Association. https://www.gsma.com/mobilefordevelopment/resources/the-mobile-gender-gap-report-2022*

informal settlements may access social media for entertainment but lack the resources or skills to use digital tools for education or entrepreneurship. Older populations often remain excluded due to literacy and usability challenges. These intersecting inequalities highlight that the participation gap is as much about social and economic structures as it is about infrastructure.

It is against this backdrop that the CFMA study "Beyond Basic Access: Mapping Solutions to the Emerging Digital Participation Gap" was undertaken in Wakiso and Mukono districts. These areas, which border Kampala, present distinct but complementary contexts for understanding digital participation. Wakiso, characterized by a mix of urban informal settlements and peri-urban communities, illustrates the struggles of populations at the edges of the capital city where infrastructure exists but affordability and literacy remain pressing challenges. Mukono, on the other hand, is predominantly rural-urban, offering insights into how geography and socio-economic diversity shape participation barriers. Together, the two districts provide a lens into the lived realities of populations who are technically connected but remain at risk of digital marginalization.

This report builds on community-based knowledge and participatory research approaches to examine how individuals and households experience digital participation beyond connectivity metrics. It asks:

What prevents people from moving from basic access to meaningful digital participation focusing on affordability and challenges data costs, device expenses), technical literacy gaps, and regulatory failures that limit equitable access?

And critically: What policy and programmatic solutions can close this emerging gap?

By situating local voices within broader debates on digital inclusion, the report emphasizes that digital participation is not merely a technical issue but a socio-political challenge that requires integrated solutions spanning affordability, device ecosystems, digital literacy, and governance frameworks.

The findings are intended to inform ongoing policy and advocacy efforts in Uganda and beyond. Specifically, they contribute to national strategies such as the Digital Uganda Vision (2019), which aspires to create a digitally empowered society, and align with continental frameworks like the African Union's Digital Transformation Strategy (2020–2030). However, this report cautions that unless policymakers look beyond access to address the systemic barriers that shape participation, digital transformation risks reproducing existing inequalities rather than alleviating them. By mapping locally grounded solutions and amplifying community perspectives, the CFMA study offers pathways toward a more inclusive digital future one in which connectivity translates into empowerment, opportunity, and active participation for all.

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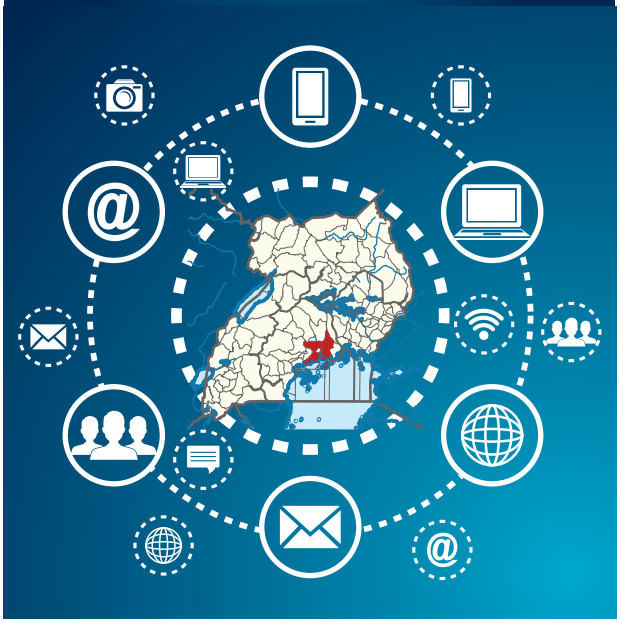

Focus On Mukono & Wakiso Districts In Uganda

With the rise of the digital economy, an important and evolving topic has been the digital divide. While efforts to bridge the digital divide have often focused on expanding internet connectivity, emerging evidence indicates a growing group of users who are technically online but cannot engage meaningfully due to high data costs, lack of affordable devices, technical literacy challenges, and policy barriers[7].

According to Bokyong et al. (2024), electronic participation (digital-participation), while promising, faces several significant issues that contribute to its limited effectiveness in enhancing citizen involvement in meaningful participation. One primary concern is the disparity in online participation levels, which are often restricted by factors such as individual attributes, including age, education, race, gender, income, digital skills, and motivation, that vary widely among the populations. Bokyong et al. (2024) add that organizational culture and the availability of networks and programs designed to facilitate participation play a crucial role at the meso level, with many public organizations struggling to create conducive environments for engagement. On a macro level, contextual factors like governance culture, regulations, and institutional frameworks further complicate the integration of digital solutions. Moreover, while digital technologies have the potential to connect citizens and stimulate collaboration, they can inadvertently consolidate power among tech firms and personnel, who may manipulate democratic processes.[8] Overall, these barriers highlight a need for a more comprehensive approach to understanding and addressing the challenges of meaningful digital participation, rather than relying on isolated case studies or applications.

These "barely online" users are largely invisible in current digital inclusion metrics, yet they represent a substantial portion of marginalized populations. Without tailored research, civil society lacks the evidence to advocate for more responsive policy, and community-led innovations remain undocumented. This research therefore aims to point out the lived realities of digital exclusion and amplify community-generated strategies to overcome them.

1.3 Research Questions

What are the specific barriers preventing meaningful digital participation, in regard to affordability challenges (data costs, device expenses), technical literacy gaps, and regulatory failures that limit equitable access?

What are the existing community-based solutions and adaptation strategies that have emerged organically to overcome these barriers? How effective are they and what are the limitations?

What are the policy recommendations and practical intervention frameworks that address the multidimensional nature of digital exclusion?

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7 *Lythreatis, S., Singh, S. K., & Abdul-Nasser, A. (2022). Towards digital economy: The impact of digitalization on e-commerce. Journal of Business Research, 146, 606–615. https://doi.org/10.1016/j.jbusres.2022.03.063*

8 *Bokyong S. et al (2024). A systematic analysis of digital tools for citizen participation, Government Information Quarterly,Volume 41, Issue 3,101954, ISSN 0740-624X,*

https://doi.org/10.1016/j.giq.2024.101954.

METHODOLOGY

2

2.0 Methodology

This study employs a mixed methods approach of majorly qualitative and partially quantitative with a strong emphasis on lived experiences and community co-research.

2.1 Research Design

This was a qualitative research design with quantifiable variables that were used for data collection across communities in two districts of Wakiso and Mukono. The study was analyzed qualitatively and quantitatively.

2.2 Sampling and Participants

The study engaged a total of six focus group discussions (FGDs), each consisting of not more than 15 participants, with two FGDs conducted in Wakiso and 4 in Mukono districts. In addition, 18 key informant interviews (KIIs) were held with representatives from civil society, local government, and other relevant stakeholders. Participants were purposively selected to capture diversity across gender, age, disability status, and occupation, including students, formal workers, and informal traders.

For mobilization, a community mobilizer facilitated the recruitment of respondents, ensuring broad representation and inclusivity.

Data collection was conducted by two trained co-researchers who administered both qualitative and quantitative tools. Their work encompassed FGDs, KIIs, cognitive testing, and community observations, all of which informed the subsequent analysis.

2.3 Data Collection Tools

• 2.3.1 Semi-Structured Interview Guides

The interview guides contained questions on digital usage patterns, affordability, device ownership and access, levels of digital literacy, and experiences with digital services. These were designed to elicit both qualitative insights and quantifiable responses, capturing personal narratives, adaptation strategies, perceived barriers, and community-driven innovations.

• 2.3.2 Observational and Cognitive Notes

Research assistants recorded detailed observational and cognitive notes to document real-world interactions with digital technologies and services, providing contextual depth to the interview data.

• 2.3.3 Photography

Photographs were taken in the field to provide real-time visual documentation, with the intention of incorporating them into the report to complement and enrich the qualitative findings.

2.4 Ethical Considerations

All participants provided informed consent prior to taking part in the study. Strict measures were observed to ensure anonymity and confidentiality, including during photo documentation. To facilitate smooth fieldwork, the research team obtained an official introductory letter from CfMA, which was presented to local security authorities such as the RDC and Defense offices.

3.0 Literature Analysis

According to Sharp (2022), meaningful participation in the digital age is hindered by a range of specific barriers, including issues with access, affordability, quality, skills, social norms, and trust.[9] However, various community-based solutions and strategies are being implemented worldwide to address these challenges.

3.1 Specific barriers preventing meaningful digital participation

Access and connectivity barriers

Approximately half the world's population lacks internet access10. Many unconnected people reside in least developed countries, rural and remote areas, or urban impoverished zones11. While 95% of the global population is covered by mobile broadband, nearly 400 million remain unconnected. In rural Africa, almost 30% cannot access mobile internet12.

There is limited device ownership as millions cannot work or go to school remotely or access technology benefits due to a lack of devices. To make matters worse, women are 7% less likely than men to own a mobile phone and 18% less likely to own a smartphone globally. People with disabilities also have significantly less access to mobile phones and smartphones[13]. In addition to this, access to electricity is a fundamental constraint to internet use in developing countries[14].

Affordability barriers

According to Sharp (2022), in developing countries, the cost of internet access and ongoing data plan subscriptions can be prohibitively high compared to household income, making them unaffordable for many low-income individuals. Writers like Clara and Qasim (2023) emphasize that mobile internet costs can be a significant percentage of household incomes for most families (e.g., 8.8% in Africa vs. 3.6% in Latin America and the Caribbean for 1GB of data).

To topple this, the cost of purchasing an internet-enabled device is a major barrier, often more significant than service costs, especially in developing countries where import duties and taxes are added. For the poorest 20% in Sub-Saharan Africa, an entry-level smartphone can cost over 120% of their monthly income15. The other issue is data poverty, even with physical access to broadband, individuals may struggle to afford sufficient data to meaningfully participate online (UNDP, 2024).

Digital skills and literacy barriers

Many individuals remain offline due to a lack of knowledge and skills related to internet use. Basic literacy is often essential for engaging with online content effectively[16]. This gap is highly pronounced among women, who

9 *Sharp M, (2022). Revisiting digital inclusion: A survey of theory, measurement and recent research. https://doi.org/10.35489/BSG-DP-WP_2022/04*

10 *Nguyen, A. (2022) Digital Inclusion: Social Inclusion in the Digital Age DOI: 10.1007/978-3-030-48277-0_14-1 University of Oulu*

11 *United Nations (2021) Digital Inclusion for All Shaping our Digital Future Online Global Dialogue. United Nations New York*

12 *Clara A and Qasim, Q. (2023). Increasing access to technology for inclusion. world bank group gender thematic policy notes series: evidence and practice note*

13 *Clara A and Qasim, Q. (2023). Increasing access to technology for inclusion. world bank group gender thematic policy notes series: evidence and practice note*

14 *Ibid 9*

15 *Sharp M, (2022). Revisiting digital inclusion: A survey of theory, measurement and recent research. https://doi.org/10.35489/BSG-DP-WP_2022/04*

16 *Ibid 15*

frequently cite inadequate digital literacy as a major barrier to owning mobile phones and using mobile internet. The challenges of poor literacy and numeracy skills can further hinder their ability to acquire necessary digital competencies[17].

Additionally, current measurement approaches to assess digital skills are often outdated, typically emphasizing computer-based tasks while the majority of users in developing countries primarily rely on mobile phones[18]. Furthermore, there are significant educational disparities at play, as individuals with lower educational attainment are less likely to actively engage with digital technologies and may not be aware of the potential benefits these technologies offer[19].

Quality of access and use barriers

According to Sharp (2022), even with access, the quality of internet can differ vastly based on device (basic phone vs. smartphone/computer), connection type (fixed vs. mobile broadband, public vs. private), bandwidth, and data caps. Speeds in developing countries are often much slower, with 2G networks offering very limited narrowband speeds. Beyond mere access, significant divides exist in skills and usage patterns as mentioned above.

Social and cultural norms

Clara and Qasim (2023) point to the restrictive gender norms, role expectations, and patriarchal systems as limiters of women's access, ownership, and use of digital technology. The other issue is family disapproval which is a major reason women in some countries do not own phones or use mobile internet. While some individuals report a lack of interest in using the internet, influenced by their mental model, culture, trust, and confidence levels[20], historically marginalized groups (e.g., based on gender, disability, poverty, rural residence) face compounded systemic barriers to education, workforce participation, and online platform exclusion[21].

Trust, safety, and ethical concerns

As the world continues to embrace digitization and digitalization of events, online Harassment and violence continue to increase. Mostly, women are disproportionately affected by online abuse, including abusive language, sexist/misogynist comments, and fears of intimidation, fraud, and privacy violations, which leads to low self-esteem limiting their online participation[22].

Additionally, the rise of AI and machine learning introduces risks of aggravating inequalities, with algorithms codifying existing biases, for example, performing worse for darker-skinned women[23]. Moreover, generative AI tools are exploited for scams, fraud, and misinformation, undermining public confidence and trust in digital platforms and institutions (UNDP, 2024). Matters are made worse when there is lack of robust policy and regulatory frameworks for data privacy and protection, along with uneven implementation, which poses risks to vulnerable populations[24].

Policy and governance gaps

In developing countries, many ICT and digital policies are not developed with the perspectives of women and underserved groups, unintentionally intensifying digital exclusion[25]. This is majorly caused by insufficient sex-disaggregated data which is a

17 *Clara A and Qasim, Q. (2023). Increasing access to technology for inclusion. world bank group gender thematic policy notes series: evidence and practice note*
18 *Ibid 15*
19 *Nguyen, A. (2022) Digital Inclusion: Social Inclusion in the Digital Age DOI: 10.1007/978-3-030-48277-0_14-1 University of Oulu*
20 *Nguyen, A. (2022) Digital Inclusion: Social Inclusion in the Digital Age DOI: 10.1007/978-3-030-48277-0_14-1 University of Oulu*
21 *UNDP, (2024). From Access to Empowerment: Digital Inclusion in a Dynamic World (Singapore: UNDP Policy Centre, 2024)*
22 *Clara A and Qasim, Q. (2023). Increasing access to technology for inclusion. world bank group gender thematic policy notes series: evidence and practice note.*
23 *Ibid 22*
24 *Ibid 22*
25 *Ibid 22*

critical barrier to understanding the character and magnitude of digital inclusion gaps.

The UNDP (2024) report states that high debt burdens in developing countries constrain governments' ability to invest in digital infrastructure and literacy programs. There's also a risk of under-providing opportunities for digital skill progression within governments.

3.2 Existing community-based solutions and strategies

Community-based solutions and strategies for digital inclusion often involve multi-stakeholder approaches, leveraging governments, businesses, individuals, and civil society organizations. From the sourced literature, these are some of the existing solutions and strategies in various communities and countries, worldwide.

Expanding access and affordability

Community-Owned networks are an innovative solution for bridging the digital divide, as exemplified by projects like Guifi.net in Spain. This initiative involves local communities taking charge of building and managing their own broadband infrastructure to provide internet access to underserved areas. Similarly, the Zenzeleni project in South Africa empowers rural communities by encouraging community involvement in establishing and running their own network infrastructure[26].

The establishment of community information centers plays a significant role in enhancing digital literacy and access in rural regions. For instance, the Digital Empowerment Foundation (DEF) in India, an NGO, focuses on creating these centers while providing digital literacy training to local populations. According to UNDP (2024), in Ecuador, the initiative known as "Infocentros Comunitario" operates over 850 community technology centers, offering free access to computers and the internet, along with educational programs and e-government services.

Public access points are another effective method of improving internet accessibility, being used in rural areas. Jamaica has implemented community internet access points and free Wi-Fi hotspots in various locations, including telecenters, libraries, and post offices. These public spaces serve as crucial resources, providing free or affordable access to necessary devices[27].

In Brazil's "Computers for All" initiative provides subsidized or low-cost computers through collaborations between the government and manufacturers, as well as public-private partnerships. In many countries, such as Peru and Chile, Universal Service and Access Funds (USAFs) help to finance infrastructure development and service provision in rural areas that remain commercially unviable, with funds collected from telecommunications operators[28].

In China, companies like ATRenew offer affordable second-hand smartphones, making technology more accessible in low-income areas. Moreover, Reliance Jio in India provides ultra-low-cost devices, while Hello Tractor has developed a unique approach by offering farming equipment on a community subscription basis, effectively transforming tractors into smart, remotely monitored tools[29].

Finally, the concept of Data Banks in the United Kingdom allows ndividuals to donate their unused data allowances to those from lower-income populations. This initiative not only facilitates broader access to the internet but also adopts a sense of community support in addressing digital inequities[30].

26 UNDP, (2024). *From Access to Empowerment: Digital Inclusion in a Dynamic World (Singapore: UNDP Policy Centre, 2024)*

27 *Ibid 26*

28 *Clara A and Qasim, Q. (2023). Increasing access to technology for inclusion. world bank group gender thematic policy notes series: evidence and practice note.*

29 *Ibid 26*

30 *Ibid 26*

Enhancing digital skills and literacy cases

Singapore's "Digital Skills for Life" (DSL) framework equips all citizens with essential digital skills for daily living, delivered through channels like the SG Digital Office (SDO), which mobilizes Digital Ambassadors for in-person, tailored training for seniors. It also leverages Silver Infocomm Wellness Ambassadors (SIWAs) for peer learning among seniors[31] (UNDP, 2024).

India's "Skill India Digital" initiative offers online platforms and digital learning resources with courses on computer basics, internet usage, digital marketing, and coding, alongside practical training and support for entrepreneurs (UNDP, 2024).

Rwanda's Digital Acceleration Project includes tailored and task-based digital literacy training targeting women and persons with disabilities. While Ethiopia's Digital Gender Program (Gebeya/IFC partnership) provides training scholarships for women to become software developers and seed funding for women entrepreneurs[32]. And Jamaica has the HEART Trust National Training Agency which offers ICT-related courses and formal training in ICT skills from an early age (UNDP, 2024).

Norway's "Digital Throughout Life" program integrates digital competence into education, supports digital security, and provides grants for digital literacy courses and community-based initiatives (UNDP, 2024).

According to Clara and Qasim (2023), interventions to increase girls' and women's participation in STEM include addressing stereotypes, creating safe learning environments, strengthening curricula, and encouraging female role models and mentorship opportunities. Additionally, digital skills development efforts include equipping individuals with knowledge to analyze authenticity, identify bias, and verify sources to combat misinformation and disinformation. UNDP has developed a definition of media and information literacy (MIL) to guide policy and empower individuals (UNDP, 2024).

Promoting digital opportunities and empowerment

Through e-commerce and entrepreneurship, organized groups like Hepsiburada in Turkey have increased women's participation on its e-commerce platform by offering virtual stores at no cost, lower commissions, free shipping, and training. Evermos in Indonesia, a social commerce platform, also empowers women entrepreneurs as resellers through digital literacy and entrepreneurship training[33].

Additionally, the World Bank's G2Px initiative aims to improve government-to-person (G2P) digital payments to accelerate financial inclusion and women's economic empowerment, including providing digital financial literacy. For digital identification, governments work with women's groups, set up community registration centers (including women-only centers), and use mobile-enabled services. The Zambia We-Fi program provides financial management training (in-person and online) to women-led SMEs (Clara and Qasim, 2023). Initiatives like Ushahidi have developed open-source digital tools for social solutions and community mobilization. UNDP has supported online Citizens' Feedback Mechanisms (e.g., in Liberia) and chatbot tools for youth engagement to enhance public service delivery and participation[34].

Strengthening trust and safety

Great examples are seen from countries like the Marshall Islands which established legal frameworks to criminalize harmful digital

31 UNDP, (2024). *From Access to Empowerment: Digital Inclusion in a Dynamic World (Singapore: UNDP Policy Centre, 2024)*

32 *Clara A and Qasim, Q. (2023). Increasing access to technology for inclusion. world bank group gender thematic policy notes series: evidence and practice note.*

33 *Ibid 32*

34 *Clara A and Qasim, Q. (2023). Increasing access to technology for inclusion. world bank group gender thematic policy notes series: evidence and practice note.*

communications. Strategies include defining and penalizing cyber aggressions, collecting data, tech companies developing solutions, and digital skills training for online safety[35].

Additionally, there are governments that are increasingly adopting human-centered design (HCD) principles to create user-friendly and inclusive digital experiences. Examples include Kenya School of Government's training on HCD, Japan's Innovation Network and Digital Agency, USA Digital Service's toolkits, and the UK's Government Digital Service which mandates HCD in service development[36].

Addressing social norms and policy gaps

Civil society organizations like the Paradigm Initiative in Nigeria advocate for policies that facilitate digital inclusion for youth, promote affordable internet, and defend digital rights. The Australian Digital Inclusion Alliance (ADIA) uses a nationwide network of partners and the Australian Digital Inclusion Index (ADII) to target at-risk groups and advocate for policy changes related to access, affordability, and digital ability[37].

Singapore's REACH (Reaching Everyone for Active Citizenry@Home) unit uses various channels (websites, social media, messaging platforms, dialogues, community outreach via a "Smart Nation Builder" truck) to gather public feedback and co-create solutions on digital related issues which are political, social and economical. Japan's Society 5.0 vision emphasizes people consultation by governments to ensure technology serves all needs[38].

Clara and Qasim (2023) further emphasize that advocating for gender-responsive digital policies and legal frameworks is crucial to ensure women's needs are considered and to dismantle tax barriers (e.g., on mobile money withdrawals). Efforts to support women's participation and leadership in the tech sector include creating respectful workplace policies, encouraging STEM education, providing mentorship, and targeting financial incentives for women-led tech firms.

The examples mentioned demonstrate a shift towards a holistic, multi-dimensional, and collaborative approaches that recognize the complex interplay of factors contributing to digital exclusion and seek to address them at various levels within communities and across societies.

35 *Ibid* 34
36 *Ibid* 34
37 UNDP, (2024). *From Access to Empowerment: Digital Inclusion in a Dynamic World (Singapore: UNDP Policy Centre*, 2024)
38 *Ibid* 37

FINDINGS AND DISCUSSIONS 4

4.0 Introduction

The analysis revealed four overarching themes that capture the realities, barriers, responses, and future directions of digital inclusion in Uganda. Within each theme, a number of subthemes emerged, offering deeper insights into the lived experiences and perspectives of participants.

4.1 Barriers preventing meaningful digital participation

Affordability of devices and services

A recurrent and strongly voiced concern was the prohibitive cost of both digital devices and the internet services needed to use them effectively. Participants across both rural and peri-urban areas described smartphones as an essential gateway to the modern digital world enabling communication, access to markets, e-government services, and social interaction yet they remain a luxury for many. Several respondents spoke of delaying or abandoning the idea of purchasing a smartphone because;

> *"...today for someone to really fully enjoy internet technology on their smart phones, your phones will be really fairly good, probably about,... 300,000shs and above and not many Ugandans are able to afford that."*-FGD

> *"...whether that is a phone, a laptop, a tablet or, you know, any form of device, but also the cost of internet generally is very high in Uganda and here compared to other regions..."*- KII

In Uganda, the enjoyment of internet technology is increasingly tied to the affordability of quality devices, with smartphones costing around 300,000 shillings and above, a price point that is out of reach for many citizens. Furthermore, the overall cost of internet access remains prohibitively high in the central compared to other regions like the West, North, South and East, significantly hindering people's ability to utilize the internet for essential activities such as research, innovation, and personal exploration. This financial barrier not only limits individual pleasure but also restricts access to valuable resources that could enhance their lives and communities.

The affordability challenge was described as a "silent barrier" that limits sustained use even after acquiring a device. Data bundles were said to be consumed too quickly for meaningful engagement in online learning, job searches, or video communication. Some respondents narrated how students were unable to attend online classes after data bundles ran out mid-month during covid-19, indicating that digital exclusion is not only about owning a device but about maintaining consistent and affordable connectivity.

Infrastructure and connectivity gaps

The challenges of infrastructure and connectivity in regions outside urban centers, such as Kampala, highlight a significant gap that affects the daily lives of students and community members alike. For instance, the varying quality of data services, even among users with similar devices, reveals the discrepancies in network coverage. Many individuals experience issues connecting to mobile networks or accessing reliable data, particularly in rural areas like Kayunga. This inconsistency not only hinders seamless communication but also limits access to educational resources and opportunities for personal growth. Such connectivity challenges contribute to a broader exclusionary effect, denying individuals in

underserved areas meaningful access to technology that is increasingly critical in today's world. Respondents note that;

> *"For me when I travelled last week from kasangati to Kayunga, my data was okay here, but when I reached Kayunga, it went off, yet the people I found there with the same network and probably the same phone had good strong network, which kind of issue is that?" -FGD*
>
> *"For our case and context, people in the village, I feel like because the network is so bad they are denied meaningful access"-FGD.*
>
> *"Networks should be standardized across the country. Put musks all over because you have the money, who wouldn't want their land leased out for a telecom that's money, so what is the issue? What are the laws of erecting these musts, how can we help them and how do they help us?"-FGD*
>
> *"Both telecommunication companies have bad networks out of Kampala"-FGD*

Further, discussions revealed a stark and persistent rural-urban divide in connectivity. While urban residents could often rely on stable 4G coverage, participants repeatedly highlighted areas especially in Oyam, Dokolo, and Lira districts as "digital dark zones." These were described as places where network signal is weak or unstable, leading to frequent call drops, slow internet speeds, and failed digital transactions.

Such infrastructural gaps have broader socioeconomic implications. Respondents spoke of missed opportunities to access market prices in real time, while youth in rural areas lamented their inability to participate in remote work or online training programs. These connectivity challenges deepen existing inequalities, privileging communities with good coverage while reinforcing the isolation of underserved areas.

Addressing these infrastructure and connectivity gaps requires strategic investment and collaboration between government entities and telecommunications companies. One viable solution is the establishment of standardized network coverage across the country, ensuring that even the most remote areas have access to reliable telecommunications services. The potential for land leasing for telecom tower installations presents an opportunity for communities to benefit economically while enhancing connectivity. However, understanding and navigating the regulations surrounding the erection of these masts[39] is essential. By fostering partnerships that prioritize infrastructure development, stakeholders can create a more equitable access landscape, empowering individuals in both urban and rural settings to engage with technology and information on an equal footing. Ultimately, bridging the connectivity gap is vital to enabling all citizens, regardless of location, to harness the benefits of the digital age.

Digital Literacy

According to Victoria and Castaneda (2023), digital literacy is a critical competence for empowering citizenship in a digital world. It has become a key element in teaching and learning across the different educational stages that has been addressed since the last decade of the twentieth century within the field of open, distance, and digital education.[40] However, it is unclear if the government of Uganda's ministry of education has ensured continuous digital literacy for the young citizens in schools especially after Covid-19. While a one respondent mentioned that there was establishment of a dedicated

39 *Masts are typically tall structures designed to support antennas for telecommunications and broadcasting.*

40 Victoria, M & Castaneda, L. (2023). *Developing Digital Literacy for Teaching and Learning*. 10.1007/978-981-19-2080-6_64.

department for e-learning within the Ministry of Education, sources are still unclear on its operations, mandate and rolling into the educational landscape.

Moreover, the government of Uganda can focus on e-learning, and acknowledge the necessity of adapting to new learning modalities and enhance the overall educational experience. This move can help bridge gaps in access to resources, as it aims to provide more equitable opportunities for both pre-service and in-service teachers benefiting students as well.

However, there are collaborations with organizations like Enabel - Belgian Agency for International Cooperation that highlight the importance of partnerships in driving educational innovation. By addressing challenges such as limited access to devices and skills gaps, the initiative seeks to create a more inclusive and effective learning environment for educators. This dual focus on pre-service training and in-service professional development ensures that teachers are not only equipped with the necessary technology but also empowered with the skills to adapt their teaching methods accordingly. As these innovations are scaled and implemented, the long-term impact could lead to improved educational outcomes and a more digitally literate teaching workforce, essential for fostering a knowledge-based economy.

It should be noted that, at the community levels, digital literacy is seen as a far-fetched achievement that is yet to be tangibly felt by the citizens. From the analysis, owning a device was not synonymous with meaningful use. Many participants noted that even when smartphones are available, digital literacy levels remain low, particularly among older adults and people in rural communities.

> ***"People may have smartphones, but many do not know how to use them beyond making calls." -FGD***

This limited tech-know-how constrains users from leveraging digital tools for education, accessing government services, or engaging in e-commerce. It also leaves many vulnerable to online scams, misinformation, and privacy breaches. Several respondents emphasized that without targeted training and user-friendly resources, investments in infrastructure or devices will have minimal impact on closing the participation gap.

Cultural barriers

There were significant concerns raised in the discussions about the intersection of culture and technology, mostly in rural Ugandan communities. Cultural barriers have been seen to impede the appreciation and adoption of technology, emphasizing a deeper issue of patriarchy and entrenched cultural norms that further marginalize women and girls. The limited engagement with technology due to societal views on gender roles translates into the need for a multi-faceted approach to addressing technological access and use. Because these barriers not only prevent inclusive participation in the digital world but also perpetuate existing inequalities.

The issue of language and its impact on literacy and comprehension is another critical point raised in the findings. The lack of a reading culture in Uganda, coupled with the dominance of languages like English, Chinese, and French in available products, creates a significant hurdle for many individuals. This linguistic limitation can lead to feelings of exclusion from the digital space, making it essential to consider linguistic diversity when developing technological solutions. Addressing these language barriers is crucial for ensuring that a broader audience can engage meaningfully with digital technology.

Lastly, findings argue for a consultative approach to app development that incorporates traditional understanding and cultural norms. By involving community members in the design process, technology can be better tailored to meet the needs and contexts of potential users. This participatory approach will not only increase a sense of ownership among users but also enhance the relevance and effectiveness of technological

solutions. In doing so, it is possible to create a more inclusive digital landscape that empowers marginalized groups, especially women and girls, allowing them to overcome barriers to online learning and economic opportunities.

Gender Digital Divide

Participants repeatedly mentioned that women and girls remain disproportionately excluded from digital spaces, and this exclusion extends beyond simply lacking access to devices or connectivity. The gender digital divide was described as a multi-layered issue involving social norms, safety concerns, and unequal allocation of household resources. In some communities, women reported that their access to smartphones was conditional on approval from male relatives, which limited both the frequency and nature of their online engagement. As a respondent mentioned that;

> *"Silenced women in families have contributed to the big digital exclusion percentage. These women at times are controlled by their husbands and ownership of basically anything is hard be it land money and more so phones, it comes off as a an insecurity to the men."-KII*

Even when women do have access, they faced heightened risks of harassment, unsolicited advances, and targeted abuse on digital platforms. Several women recounted instances of blackmail, intimidation, and "revenge pornography" where intimate images are used to extort or shame them. This climate of fear often leads to self-censorship and withdrawal from online platforms, depriving them of opportunities for networking, learning, and business. As one young woman put it, "It is not just about being online it is about feeling safe online, and most of us do not feel that way."

Intersectionality of exclusion

Digital exclusion was not experienced in the same way by all; it intersected with other social and economic vulnerabilities such as poverty, disability, and rural residence. Respondents highlighted that persons with disabilities encountered both technical and financial barriers. Many devices and platforms were not disability-friendly, with screen readers, subtitles, or adaptive hardware being rare or unaffordable. Deferent respondents express that;

> *"The most affected are our women and girls in the rural areas and people with disabilities, refugees, the youth, especially those in under resource schools..."*
>
> *"The PWDs sentiments are not catered for."*
>
> *"Here at the University according to the building and training area the PWD's are not favoured. This automatically excludes them because they cannot now climb up to the training area."*
>
> *"The systems themselves do not favour the blind, those with speech impairment... I want you to show me a phone that a blind person uses or someone who cannot speak uses."*

The challenges faced by marginalized groups, especially women and girls in rural areas, people with disabilities (PWDs), refugees, and youth in under-resourced schools, highlight a critical issue of systemic exclusion. The sentiments expressed reveal a significant gap in accessibility and inclusion within educational and training environments, at learning institutes. The inability of PWDs to access training facilities due to physical barriers, such as inadequate building designs, reinforces the notion that these systems are inherently unfriendly to those with disabilities. Furthermore, the lack of suitable technology for individuals with different

impairments within the country such as blind individuals or those with speech limitations translates into digital exclusion. For these groups, even the existence of digital opportunities such as online marketplaces or e-learning did not translate into real benefits without tailored interventions addressing each layer of disadvantage.

This situation calls for a comprehensive re-evaluation of policies and infrastructure to ensure that all individuals, regardless of their physical capabilities, can participate fully and equitably in educational and societal opportunities.

Policy and legal restrictions

Respondents identified significant gaps in Uganda's digital governance framework. While some policies exist to address ICT access, they were perceived as outdated or insufficient to respond to emerging challenges. There was particular concern about the absence of robust protections for digital rights in fast-evolving areas such as artificial intelligence, data privacy, and algorithmic decision-making.

Participants also pointed to weak enforcement of existing laws, leaving users vulnerable to exploitation, cybercrime, and privacy breaches. For instance, while there are provisions in law against cyber harassment, survivors of online abuse often reported limited follow-up by authorities. Several key informants stressed that without strong ethical and regulatory frameworks, digital innovation risks reinforcing existing inequalities rather than reducing them.

Participants also identified restrictive policy and legal environments as significant barriers to equitable access. Surveillance practices, arbitrary regulation of online spaces, and laws perceived to target specific communities like LGBTQ+ individuals were seen as stifling open participation. Participants commented on the governing digital laws in specific maners;

"For that issue, I must not say that the laws are actually there. We might be very much more ignorant about them. Because most of these websites and applications that we are using have terms and conditions."- FGD

"We make a lot of laws we ratify, we adopt but we do not follow them to the dot. They are like documents in the library."- KII

"Those are outdated now that we are moving into the machine learning area And AI we need to update our laws to date."-KII

"We have weak enforcement of digital laws. It's a bit uneven and not really a priority. The people supposed to enforce like the police are not trained and sometimes are unaware of the digital protection laws." -KII

"The lack of knowledge for the digital laws is a countrywide issue sometimes even in the corporate world people have succumbed to this." -KII

"If the government doesn't come out to teach us these laws, we do not not know these laws, unless if you are saying that you have come to teach us, but we do not know truthfully." – FGD

"For me I have heard of the computer misuse act for example where people are releasing nudes and the tv is reporting this..." FGD

From the quoted insights there is a significant concern regarding the efficacy of data privacy laws and the public's familiarity with them. While acknowledging the existence of legal frameworks, participants from both the KII and FGD highlight a disconnect

between legislation and accountability. Many individuals seem unaware of their rights, largely due to the complexity and often dense legal jargon found in the terms and conditions of the digital platforms they use. This lack of awareness underscores a broader issue of public education where the mere existence of laws does not guarantee their impact if citizens are not informed of their rights and responsibilities.

Another prominent is the inadequacy of enforcement mechanisms surrounding digital laws. Participants pointed out that law enforcement agencies, including the police, often lack the necessary training and knowledge to effectively uphold these laws. This reality diminishes the practical effectiveness of the existing legal frameworks, leading to the perception that such laws are merely theoretical. The metaphor of laws as "documents in the library" emphasizes this disconnect, suggesting that without application and enforcement, these regulations serve little purpose in protecting citizens' digital rights.

There is an urgent call for updating the existing laws to keep pace with advancements in technology, in regard to artificial intelligence and machine learning. As technology evolves, so too must the legal frameworks that govern it, ensuring they are relevant and comprehensive. The discussions highlight a collective recognition that the government has a critical role in educating the public about digital laws and their implications. Without a concerted effort to improve public knowledge and update legislation, the effectiveness of data privacy protections may remain severely compromised in an increasingly digital world.

4.2 Community initiatives and strategies

Addressing affordability challenges

Communities and individuals have developed various organic solutions and adaptation strategies to navigate the persistent digital barriers concerning affordability, device usage, and personal safety online. These strategies, while often effective at an individual level, frequently highlight systemic limitations and the broader need for comprehensive interventions.

University students, for instance, extensively utilize free Wi-Fi services like eduroam provided on campus, strategically downloading necessary materials or watching entertainment during these periods to conserve personal data bundles. When campus Wi-Fi is inaccessible or unreliable, many switch to cheaper mobile network providers like Lyca, although its network quality can be inconsistent depending on the geographical location.

Some individuals and groups pool resources, contributing money to purchase communal Wi-Fi devices (MiFi) or larger data bundles for shared use, thereby collectively reducing individual costs. On a personal level, students prioritize their spending, often choosing basic necessities like food or sanitary towels over data when financial resources are limited. Some even use "beeping" (making missed calls) or rely on limited text-only services, like MTN Zero on WhatsApp, to communicate vital information without incurring data costs. To control data expenditure, individuals have adopted practices such as minimizing phone usage, setting specific internet timetables, or even reducing the data consumption rate (Mbps) for individual applications.

Additionally, respondents mentioned projects like the MKOPA which has significantly contributed to increasing digital inclusion by providing affordable access to smartphones for individuals who might otherwise be unable to afford them. By offering a pay-as-you-go model, MKOPA allows users to acquire devices without requiring the upfront costs that can be prohibitive for many in low-income communities. This initiative enables more people to join the digital economy, access information, and utilize communication tools that are increasingly essential for daily life, education, and entrepreneurship. As a result, MKOPA plays a critical role in bridging the digital divide and empowering users with the technology they need to connect to various services and opportunities.

However, there are notable gaps in the

MKOPA project that can hinder its overall effectiveness in promoting digital inclusion. One significant concern is the abrupt disconnection of services after a short payment period, which can leave users without access to essential communication tools, thereby negating the advantages of having a smartphone. This lack of flexibility in payment terms has created financial stress for users, making it difficult to balance their budgets while still maintaining access to their devices. Furthermore, there's a need for enhanced financial literacy programs to help users navigate payment options effectively, ensuring that they can manage their commitments and avoid service disruptions. Addressing these gaps would further strengthen MKOPA's impact on fostering digital inclusion.

Findings further indicated or labeled internet cafes as vital resources for enhancing digital inclusion, providing access to technology and the internet for individuals from varied backgrounds. Many respondents emphasized the importance of these spaces, as they are open to everyone, regardless of gender. This level of accessibility is crucial in bridging the digital divide, especially in communities where personal computer ownership and reliable internet connections are still out of reach.

However, the experience of using internet cafes is not without its challenges, as respondents noted. Many users reported frustrations stemming from unreliable internet connectivity and inconsistent electricity supply, which can disrupt their online activities and diminish the effectiveness of the services provided. Compounding this issue is the reliance on older devices, which not only slow down performance but can also limit access to current applications and platforms. To truly realize the potential of internet cafes as hubs of digital inclusion, it is essential to address these infrastructural challenges. Respondents called upon the government and well wishers to donate or revamp these cafes as an act of corporate responsibility to further improve connectivity for all.

Addressing technical literacy gaps

It is imperative to note that when it comes to addressing technical or digital literacy gaps in communities, what is on ground is that some organizations have implemented several initiatives to enhance digital inclusion at this level. Notably the STEM boot camp held between 2021 and 2023 in collaboration with the U.S. Embassy in Uganda was mentioned. This program focused on empowering young women aged 18 to 35 by promoting gender-responsive technology education in science, technology, engineering, and math (STEM). By facilitating access to digital literacy and technology, the initiative aimed to help participants realize their full potential while ensuring they have the necessary skills to thrive in a digital economy.

Additionally, through the Agile Action Fund, women's economic justice in the digital economy were addressed targeting young women in the informal sector. This initiative explored how to leverage technology and social media for business growth while also highlighting risks like digital theft and identity theft. Furthermore, awareness has been promoted on internet rights and governance, emphasizing the importance of responsible internet use, AI ethics, and content moderation. These programs collectively aimed to equip individuals with the tools and knowledge to navigate the challenges and opportunities presented by the rapidly evolving digital landscape.

Barefoot Law has significantly enhanced community digital inclusion by providing vital legal services and training that empower individuals in both urban and rural areas to effectively use digital tools for accessing legal support. By teaching communities, especially marginalized groups like women, girls, and persons with disabilities, how to utilize smartphones and navigate online platforms safely and meaningfully, Barefoot Law bridges the gap between legal resources and those in need. Their initiatives, including digital rights training, aim to improve technical literacy and address issues such as language barriers and cultural factors, ensuring broader participation in community decision-making and fostering a more inclusive digital

landscape.

While universities like Makerere University have made significant strides in bridging the digital divide by introducing digital tools and conducting pilot tests aimed at various demographics focusing on gender inclusivity, gaps remain. By training audiences and actively seeking to increase female participation in technology initiatives, the university is working to create a more balanced representation in the digital space. These efforts demonstrate a commitment to harnessing technology to empower underrepresented groups and enhance their access to educational resources.

However, there remain notable gaps that hinder full inclusivity and effectiveness. Resource constraints concerning time and adequate equipment impede the thorough training and testing necessary for successful implementation. Additionally, the current systems do not adequately address the needs of women and persons with disabilities (PWD). The physical infrastructure and the design of technology do not consider accessibility, leaving individuals with disabilities at a disadvantage. Without comprehensive strategies that prioritize these groups, the university's initiatives risk falling short of their potential impact, perpetuating the digital divide rather than bridging it.

Partnerships and collaborations

Collaborations between civil society organizations, government agencies, private sector actors, and international donors were described as critical in scaling up digital inclusion work. Partnerships with organizations such as Enabel, the Uganda Communications Commission (UCC), Netlabs and WOUGNET were frequently mentioned as successful examples.

These alliances combined technical expertise, funding, and community trust to pilot gender-sensitive digital programs. In some cases, partnerships facilitated the provision of subsidized devices, installation of community Wi-Fi hotspots, and the integration of digital literacy into school curricula. Respondents stressed that multi-stakeholder collaboration would be comprehensively valuable in addressing systemic gaps that no single actor could solve, such as aligning infrastructure investment with local training needs.

Advocacy and partnerships can be a double-edged sword. On the positive side, they enable diverse stakeholders to come together, pooling resources, expertise, and networks to address common challenges effectively. This collaboration can enhance the impact of initiatives, create synergies, and foster innovative solutions that might not be achievable individually. However, potential downsides include the risk of fragmented efforts if communication and coordination are lacking, leading to inefficiencies and overlapping agendas. Additionally, power dynamics and differing priorities among partners can create conflicts, hindering progress and trust. Balancing these aspects is crucial for successful advocacy and partnership endeavors.

Advocacy and awareness campaigns

Civil society organizations received widespread recognition for their role in raising awareness about both the opportunities and risks of digital participation. Campaigns covered topics such as online safety, cyberbullying, gender-based violence in digital spaces, and responsible social media use. These initiatives often used relatable storytelling, radio talk shows, and community theater to reach audiences with varying literacy levels.

Such efforts helped build community resilience against online exploitation and misinformation. They also encouraged greater engagement in civic and economic activities by demystifying technology and highlighting its potential benefits. As one female entrepreneur shared,

> ***"Before the campaign, I feared social media. Now I use it to market my goods and connect with customers."– FGD***

Advocacy plays a crucial role in driving positive change within communities and society at large. It raises awareness about pressing issues, empowers individuals to voice their concerns, and encourages collective action. Through advocacy, marginalized groups can gain access to resources and opportunities that might otherwise be denied to them. It fosters dialogue and understanding among diverse stakeholders, leading to informed decision-making and policy reforms. Therefore, effective advocacy not only highlights challenges but also promotes solutions, creating a more equitable and just environment for all.

Participants widely recognized the critical role played by advocacy groups in lobbying for digital rights and amplifying community voices. Organizations such as CfMA, Enable, Paradigm Initiative, Chapter 4, APC, among others, were commended for challenging repressive policies, pushing for more inclusive ICT regulations, and promoting awareness of digital freedoms. Advocacy efforts included engaging with policymakers, producing evidence-based policy briefs, and organizing community dialogues to feed grassroots perspectives into national debates.

However, advocacy was described as a "high-stakes" activity in the current environment of heightened surveillance and restricted civic space. Participants noted that activists and community leaders often had to navigate sensitive political boundaries to avoid reprisals. As one respondent put it, "We had to be careful not to cross certain lines." This climate of caution sometimes meant that advocacy work was conducted in coded language, through informal channels, or under the umbrella of less politically sensitive development projects. Other respondents criticized the limited reach of advocacy efforts in the digital space claiming that it is looped towards certain groups and at times rural communities are not reached.

CONCLUSION

5

5.0 Conclusion

The study revealed that Uganda's digital inclusion landscape is marked by deep and intersecting inequalities. While basic internet access has expanded, meaningful digital participation remains out of reach for many including women, rural residents, and persons with disabilities. Structural challenges such as the high cost of devices and data, poor rural connectivity, and limited digital literacy combine with cultural norms and gender biases to create persistent exclusion.

Beyond economic and infrastructural gaps, the gender digital divide is amplified by online harassment, restrictive cultural expectations, and unequal household technology allocation. These barriers are further compounded for individuals facing multiple vulnerabilities such as poverty, rural isolation, and disability making the digital gap not just a matter of access, but of compounded disadvantage.

The policy environment is underdeveloped, with weak enforcement of existing protections and little preparedness for emerging risks linked to artificial intelligence, data privacy, and digital safety. In some cases, restrictive laws and pervasive surveillance discourage free expression and civic engagement online.

Despite these challenges, the study also highlights promising community-driven solutions. Locally managed networks, targeted skills training, multi-stakeholder partnerships, and grassroots advocacy have demonstrated tangible impacts in bridging digital gaps. These initiatives show that progress is possible when infrastructure, skills, and rights protections are addressed in tandem, and when communities are actively engaged in designing and managing solutions.

Future Priorities

Looking ahead, participants emphasized the need for a multi-pronged strategy that combines infrastructure expansion, capacity building, and legal protections. There was a strong call for increased investment in broadband infrastructure, particularly in rural and underserved regions, coupled with the provision of community-level ICT equipment and affordable training programs. As one respondent recommended,

> "At the community level, we need more broadband, ICT equipment, and training if we are to close the digital divide."-FGD

Safety in digital spaces was repeatedly highlighted as a priority, with participants urging for stronger measures to protect women, girls, LGBTQ+ individuals, refugees, PWDs and other marginalized groups from harassment, hate speech, and exploitation. Scaling up successful grassroots interventions such as community networks and digital hubs was seen as essential for sustainability, especially when these are combined with localized digital literacy programs and continuous community engagement.

In summary, from the findings, digital inclusion in Uganda is shaped by a complex interplay of economic, cultural, and political factors. While community-driven initiatives, advocacy efforts, and cross-sector partnerships offer a foundation for progress, significant barriers remain. Addressing these requires an integrated approach one that marries infrastructure investment with gender-sensitive policies, inclusive training, and robust protections for rights and safety in digital spaces. Only through such a holistic strategy can Uganda move beyond mere connectivity and achieve meaningful digital participation for all.

5.1 Recommendation

Digital exclusion presents a complex challenge, rooted in issues ranging from financial constraints to social norms and inadequate infrastructure. To effectively address this multidimensional problem, a combination of evidence-based policy recommendations and practical intervention frameworks is crucial, drawing on the experiences and insights from various communities.

Evidence-based policy recommendations

- Regulate costs and subsidize access: The government should implement policies to reduce the high cost of internet access and mobile data, recognizing it as a fundamental necessity in modern life. There is a strong call for data costs to be lowered, with current expenditures often exceeding what students and rural communities can afford, leading to difficult choices between internet access and basic needs like food or sanitary towels. Policies should also explore mechanisms for making smartphones and other digital devices more affordable and accessible to low-income populations, potentially through subsidies or regulated pricing, similar to past initiatives of providing tablets for students. This addresses the significant barrier that device and data expenses pose for many.

- Expand and standardize digital infrastructure: A national mandate is needed to invest heavily in expanding internet infrastructure, including the installation of more fiber optic cables and establishing consistent, reliable network coverage across all regions, particularly in remote and rural areas. Connectivity issues, slow internet speeds, and the limited reach of public Wi-Fi services highlight the urgent need for a standardized network quality nationwide. Furthermore, ensuring stable electricity supply is paramount, as power outages severely hinder device charging and internet access, especially in regions not connected to the national grid. The Uganda Communications Commission

(UCC) could play a central role in regulating and ensuring uniformity in telecommunication services.

- Integrate digital literacy into education and public awareness: It is imperative to integrate mandatory ICT and digital literacy into school curricula from an early age, equipping younger generations with essential skills. Beyond formal education, comprehensive public sensitization campaigns are necessary to bridge knowledge gaps across all demographics, including adults and the elderly. These campaigns should educate citizens on digital rights, online safety, and practical device usage. Utilizing diverse media and local languages is critical for these programs to be effective and culturally relevant, making complex digital concepts accessible to everyone.

- Strengthen digital rights and online safety laws: Policies must focus on robust enforcement of existing cybercrime laws and the development of new regulations to address emerging threats like AI-driven issues, online bullying, and the misuse of personal data. There is a need for clear accountability mechanisms for perpetrators and better training for law enforcement and judicial officers to handle digital evidence and cyber-related cases. Addressing public mistrust regarding data privacy and government surveillance through transparent policies is also crucial to foster a safer online environment. Laws must protect individuals from scams, phishing, and mobile money fraud, which are prevalent issues causing significant financial and personal distress.

- Champion inclusive design and content localization: Mandatory inclusive design principles for all new digital tools and platforms should be established, ensuring they are accessible and user-friendly for persons with disabilities (PWDs) and other marginalized groups, possibly through assistive technologies. Policies should actively promote and fund the development of digital content in local languages, acknowledging that language barriers significantly impede meaningful digital engagement for non-English speakers. Furthermore, policies need to address gender-specific barriers, such as economic inequalities that disproportionately affect women's access to devices and the societal norms that can limit their independent use of technology.

- Establish a coordinated national digital transformation strategy: A unified and integrated national digital transformation strategy is essential, moving beyond fragmented efforts. This strategy should be overseen by a central government body, such as the Ministry of ICT and National Guidance, ensuring seamless collaboration across all ministries, government agencies, NGOs, and private sector partners. Such a framework would clearly define roles, responsibilities, and dedicated, sustainable financing mechanisms for digital inclusion initiatives, reducing reliance on external funding and fostering a more cohesive national approach.

Practical intervention frameworks for Governments and CSO partners

- Community-led connectivity and device access programs: To enhance digital inclusion, it is recommended that initiatives like MKOPA improve payment flexibility and integrate financial literacy programs to empower users in managing their commitments effectively. Additionally, the government and stakeholders should address the infrastructural challenges faced by internet cafes by ensuring reliable internet connectivity and investing in modern devices. By upgrading these vital

resources and providing support for users, we can create a more inclusive digital environment that bridges the digital divide and enables all individuals, regardless of their background, to access technology and information essential for daily life, education, and entrepreneurship.

- Localized digital literacy and skills training: Establish and support peer-to-peer learning networks where digitally literate individuals guide others in fundamental smartphone usage, app navigation, and internet safety. These informal learning structures are vital in communities where formal education may be lacking. Complementing this, offer short, practical digital skills courses focused on everyday online tasks like business promotion, basic research, and safe browsing. These courses should be delivered in local languages, employing culturally relevant teaching methods such as educative comedy to resonate with diverse audiences. The creation of community information centers or innovation hubs can provide accessible spaces for device use and structured training.

- Robust online safety and support systems: Develop and publicize accessible reporting mechanisms, such as toll-free helplines or dedicated hot desks within local police departments, for reporting digital crimes, scams, and online harassment. It is crucial that staff operating these services are adequately trained to handle digital evidence and guide victims. Launch widespread community awareness campaigns to educate citizens on how to identify and avoid common scams, phishing links, and mobile money fraud, including practical tips on verifying information and avoiding untrusted websites. Promoting digital etiquette and responsible online behavior can also help mitigate online bullying and the spread of misinformation.

- Furthermore, advocate for and facilitate increased budgeting for digital initiatives at the local government level, aligning these expenditures with national digital transformation goals.

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