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Menu | Contents ∨ ∨

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Gendered Digital Inequities in African Contexts: Measuring and Bridging the Gaps

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Abstract

While access to information and communication technologies (ICTs) such as mobile phones and the internet has increased over the last couple of years, new digital inequalities also continue to emerge regarding gender, socioeconomic backgrounds, and different levels of digital literacies and education. The gendered nature of access to and use of digital technologies shapes opportunities for many African women, influences the process of social inclusion, and thus exacerbates social inequalities. This essay interrogates the interrelationships of gender, new digital technologies, and socioeconomic development among marginalized groups in different contexts in countries on the continent of Africa, focusing on the rising digital inequities among marginalized communities. I make the case for the collection of disaggregated data and comparative studies of gendered digital inequities as important for understanding and bridging gaps. By focusing on marginalization rather than poverty, I examine the relationships between people, locales, and institutions rather than assets alone. By examining how distributed groups connect through digital tools, I hope to raise some important questions about the nature of digital inequities in today's networked society and address gender empowerment through inclusive and research-based ICT policy making and practice.

Keywords

ICT, Gender, Digital Inequities, Africa, Development

Introduction

The digital practices and cultures that mark today's convergent digital landscape have changed remarkably. In this essay, I reflect on gender and information and communication technologies (ICTs) for development (ICT4D) scholarship in Africa by drawing from empirical studies over the past decade. The goal is to connect macro- and microperspectives of this subfield in discussing some of the core issues, as well as reflect on some of the ways in which gender gaps are measured. I will discuss some of the themes that have emerged from both scholarship and practices addressing multiple intersections of inequalities. I will also outline some of the challenges and implications for gender and ICT4D research and practice going forward, reflecting on the contradictions, opportunities, and challenges presented by our collective digital futures that are both local and global.

There is a growing body of work on how everyday mobile phone practices are reshaping development discourses, gendered interactions, and mobilities within the context of existing global and local power structures (Burrell 2014; Ling and Horst 2011; Steeves and Kwami 2017; Tacchi, Kitner, and Crawford 2012; Wallis 2011, 2013). These studies help illuminate the interplay of marginality, mobilities, and social networks as reflected in mobile phone practices and livelihood strategies in various contexts. I argue that the problem of digital disparities in the current global information economy is primarily a problem of power because the existing power relations determine who benefits from and shapes the content, development, and use of ICTs. These asymmetries of power define the conditions within which these ICTs are embedded for use. Thus, addressing gender empowerment through ICTs requires an approach that considers how multiple voices can be empowered in ways that strengthen communicative practices and ensure inclusiveness of marginalized groups in ICT policy making.

ICTs in Africa

Today, digital technologies such as mobile phones are almost taken for granted in many parts of the world. The global digital report on usage patterns and trends (Kemp 2018) reveals that, in spite of lagging behind, the continent of Africa has the fastest growth rates in internet penetration, with the number of internet users across the continent rapidly increasing. Much of this growth has been driven by accessibility to smartphones and mobile data plans. According to GSMA, the corporate lobby for mobile operators, Sub-Saharan Africa is the fastest growing mobile market with 456 million unique mobile subscribers and a penetration rate of 44 percent (GSMA 2019). In their report on the mobile economy in Sub-Saharan Africa, the highest growth rates are in Ethiopia and Nigeria, with Seychelles, Gabon, and South Africa scoring the highest penetration rates. These and other high-use/high-growth countries, including Kenya, Tanzania, Ghana, Côte d'Ivoire. Eritrea, and Central African Republic, have some of the lowest penetration rates globally because the penetration rates reflect privileged sectors (GSMA 2018).

Additionally, discourses focusing on the role of digital technologies and newfound mobilities in the global South, especially on the continent of Africa, continue to be steeped in technological determinism at the expense of deep explorations of the complex web of interactions between human actors and mobile technologies. Some scholars and practitioners, however, have noted that a nuanced approach to studying these interactions requires interrogation of sociocultural practices and contradictions (Burrell 2014; Donner 2008; Horst and Miller 2006; Miller and Slater 2000; Slater and Kwami 2005).

Moving from the Margins: Mobile Phone for Development

Discussions on ICTs in Africa often focus on whether ICTs constitute tools for accelerated development. Many believe that "the availability and use of information and communication technologies are a prerequisite for economic and social development in our world" (Castells 1999, 3), and as a result African countries cannot afford to be left behind. This framing of ICT4D discourse has gained widespread use in global and local contexts. Unfortunately, the top-down and gender biases in ICT4D projects have resulted in several initiatives that have failed to address gender gaps (e.g., see Melkote and Steeves 2015; Harding 2006).

Scholars and commentators have examined discourses that either position Africa as behind in the information and communication revolution (Jensen 2003) or are uncritically optimistic about a technological fix for Africa's problems. With high rates of mobile phone penetration, the ubiquity of mobile phones in many African countries has been hailed as Africa's digital revolution. Several reports have noted the impact of mobile phones, with development agencies and government institutions jumping on the "Mobile for Development" (M4D) bandwagon. The mobile phone, like other ICTs before it, has been touted as the tool for accelerated socioeconomic development, with prescribed uses outlined by development and government agencies.

Scholars critiquing digital humanitarianism in Africa have noted how the promotion of the "Africa rising" narrative with regards to ICTs exacerbates the conditions of marginalized groups such as women and people living in rural areas (Duffield 2016; Otenyo 2017; Read, Taithe, and Mac Ginty 2016). These scholars argue that such discourses often mask the livelihood conditions and contradictions of many marginalized groups in Africa and have not altered power relations in emancipatory ways. Although they are well-intentioned, ICT4D research and projects continue to fail the poor by failing to address the lived experiences of marginalized groups (Easterly 2006; Heeks 2002; Kleine and Unwin 2009) or to advance research that critiques ICT policy and practices in meaningful ways (Harris 2016; Davison 2012; Qureshi 2015). Leslie Dodson, S. Ravi Sterling, and John Bennett (2013), in their evaluation of the failure of ICT projects in developing countries, noted that the World Bank spent \$4.2 billion on ICT efforts that were "limited" and "largely unsuccessful"; they concluded that "top-down, technology-centric, goal-diffuse approaches to ICTD contribute to unsatisfactory development results" (19).

Hence, a growing body of work focuses on the everyday use and appropriation of the mobile phone in reshaping development discourses, gendered interactions, and mobilities, and negotiating existing global and local power structures at the margins (Burrell 2014; Ling and Horst 2011; Kwami 2016; Tacchi, Kitner, and Crawford 2012; Wallis 2011, 2013). These studies consider the interplay of marginality, mobilities, and social networks as reflected in the mobile phone practices and livelihood strategies in the African context and challenge the dominant optimism around the mobile phone's contribution to socioeconomic development. The focus here is how mobile phones could empower socioeconomically marginalized young people to overcome their marginality by examining how the technology is put to use within the broader sociocultural, economic, and political contexts (Cibangu, Hepworth, and Champion 2017; Sam 2017).

From Digital Divide to Digital Inequities

Due to changes in the digital landscape and the growth of studies that seek to understand the nature of human interactions in today's digital society, Pippa Norris's term "the digital divide" (2001), which refers to the differentiation of ICT access based on "haves" and "have-nots," has evolved. There has been a gradual shift in the discourse and rethinking of the digital divide to a focus on digital inequities. Scholars have noted that differences in the access to, use of, and impact of ICTs are complex and must be contextualized within the capabilities and resources available to users. As a result, several scholars have critiqued the concept of digital divide as overly simplistic (Gunkel 2003; Warschauer 2002, 2003) because differential access to ICTs and use are multifaceted and layered (Castells 2002; Davison and Cotten 2003; Norris 2001; van Djik 2005; Gorski 2005; Warschauer 2003).

Access to ICTs is intertwined with larger social, economic, political, and cultural issues that have implications for opportunities for economic mobility and social participation. As such, there is not just one big divide, dichotomy, or binary between those who have access to ICTs and those who do not; rather, there are various shades of marginality (Norris 2001; Selwyn 2004; van Djik 2005, Kvasny 2006), with people fluctuating between different levels of digital inequities. Paul DiMaggio and colleagues (2004) noted the shift from unequal access to differentiated use in their literature review on digital inequality, and they argued that "a more thorough understanding of digital inequality is required that looks at ICTs in its broader theoretical context and considers how new communication technologies impact existing social inequalities" (355). In their article "Digital Inequalities and Why They Matter," Robinson and colleagues (2015) noted that marginalized groups in society may use ICTs such as mobile phones and internet differently for social mobility compared with other socioeconomic groups. The intersectional nature of digital inequities encompasses determinants such as gender (Ono and Zavodny 2003, 2007, 2008), race and ethnicity (Mesch and Talmud 2011), and socioeconomic status

(Witte and Mannon 2010). As such, digital inequities in many ways reinforce existing social inequities and in some cases exacerbate them.

Gender and Digital Inequities

While many ICT policies and initiatives continue to fail to adequately address gender issues, there is evidence from several empirical studies that women in the developing world, and particularly those in Africa, have significantly lower technology participation rates than men. This is primarily because of entrenched patriarchal societal structures and sociocultural attitudes about the role of women. However, there is also evidence that when those women are able to engage with ICTs, a wide range of benefits—from personal to familial and communal—become possible (Antonio and Tuffley 2014).

The International Telecommunications Union (ITU) and UNESCO have called for action after noting that the internet gender gap globally is growing and this gap is largest in Africa, particularly among low and middle income groups (Broadband Commission 2013). Women living in least developed countries are 31 percent less likely than men to be connected (ITU 2016). The World Wide Web Foundation's report card on women's rights online noted that fewer women than men in African countries such as Ghana (20 percent), Kenya (20 percent), and Nigeria (36 percent) have access to the internet (World Wide Web Foundation 2016a, 2016b, 2016c).

Although many of the respective national ICT policies recognize ICTs as a tool for fighting gender inequality, there are no clear targets in place to monitor these objectives or the collection of gender-disaggregated data. The GSMA "Mobile Gender Gap Report" (2018) noted that there is a significant gender gap in mobile usage, particularly for services that impact social mobility. Women in low or middle income countries are less likely to use a mobile phone compared with men. Additionally, women are 26 percent less likely than men to use mobile internet, with cost remaining a major barrier to mobile phone ownership and mobile internet usage. Bridging these gender inequities requires measuring these gendered gaps with regards to ICT access and use.

From WSIS to MDGs to SDGs

To understand gender and digital inequality in the African context, it is important to situate it within the global context of debates about the role of ICTs for socioeconomic development. The Millennium Summit in 2000 debated the role of the United Nations (UN) in addressing major global inequities in relation to extreme poverty despite four decades of development aid. The 192 member states agreed on eight interrelated Millennium Development Goals (MDGs), for eradicating poverty by 2015. The need for technological support to achieve the MDGs helped catalyze subsequent events, including UN Secretary General Kofi Annan's 2001 creation of a multistakeholder UN Information Communication Technologies Task Force to analyze multiple ICT4D issues, such as internet governance and the implications of ICTs for the MDGs (Steeves and Kwami 2012, 2019). The MDGs included eradicating extreme hunger and poverty, achieving universal primary education, promoting gender equality and empowering women, and ensuring environmental sustainability. At the same time, together with the rapid spread of new ICTs, multilateral agencies, nation states, and civil society organizations began to discuss the role of the emerging information society in achieving the MDGs, culminating in the World Summit on the Information Society (WSIS), a two-phase UN-sponsored summit in 2003 and 2005.

One of the goals set out in WSIS Phase I was to bring 50 percent of the world's population online by 2015. Feminist scholars, practitioners, and activists saw the need for women to be included in these early debates and formed the WSIS Gender Caucus, a multistakeholder group to promote gender integration and women's rights in the WSIS process. Formed during the African Regional Preparatory Conference held in Bamako, Mali, from May 25 to 30, 2002, the WSIS Gender Caucus was composed of representatives of organizations invited by the UN Development Fund for Women (UNIFEM) to ensure that gender dimensions would be included.

Based on these summits, many nations, including those in Africa, drafted ICT policies that often envisioned ICTs as a magic fix to leapfrog their development in the emerging information society. However, as the 2015 deadline approached, there was widespread acknowledgment that most countries had not achieved the MDGs

(Briant Carant 2017). In 2015 the Sustainable Development Goals (SDGs) were unveiled as the global development agenda for the next fifteen years (2015–2030). Although ICTs are not explicitly stated as part of the SDGs, the UN acknowledges that ICTs are essential to fast-forward progress toward achieving each of the seventeen SDGs under the slogan of "ICTs for a Sustainable World hashtag #ICT4SDG" (ITU 2017a, 2017b). The Executive Director of UN Women has noted in the Fast-Forward Progress report that "the link between technology and women's rights is clearly reflected in SDG 5 on gender equality and the empowerment of women, which includes a specific target on utilizing technology and ICTs to realize women's and girls' empowerment" (Mlambo-Ngcuka 2017, 41). Also, SDG 9, to build resilient and sustainable infrastructure, includes ICTs as key infrastructure essential to development.

Measuring Gendered Digital Inequities

Scholars have noted that the main issue at the core of today's digital revolution is who gets empowered and who is further marginalized by ICTs. There is a gender gap reported in many studies even though these digital tools have the potential to empower women by increasing livelihood generation and income and by providing more effective access to education and health care (Antonio and Tuffley 2014). Several studies on the digital gender divide have argued for the importance of intersectionality in measuring digital inequities, including factors such as income, level of education, age, ethnicity, and geographic location, all of which inform inequities in access and use (Faulkner 2002; MacKeogh and Preston 2002; Fortunati and Manganelli 2002; Kwami 2010; Deen-Swarray et al. 2012; Broadband Commission 2017; Ericsson ConsumerLab 2017; Steeves and Kwami 2017).

There has been gradual growth in empirical work on measuring gender gaps in relation to ICTs. The Ericsson ConsumerLab Research Project uses quantitative analysis of historic data gathered from thirty-two markets globally to study people's behaviors and values in relation to digital technologies and to provide insights on ICTs trends. In Africa, the markets they study have included Angola, Côte D'Ivoire, Nigeria, and South Africa. Drawing on additional sources from the World Economic Forum and the Global Gender Gap Index, the Ericsson project has attempted to measure gender gaps with a focus on gender parity in several areas, including use and practices regarding ICT tools and services, and considering age, occupation, and income. Several studies, including the Ericsson project, show that the gender gap is manifested in five main ways: services used, time spent, money spent, devices used and locations of use, and digital literacies (Ericsson ConsumerLab 2017).

Research on gender and ICTs in African contexts has revealed numerous gender-specific issues that have implications for ICT4D policy and practice:

- Poverty, as women are economically poorer than men.
- Education, as women and girls make up nearly two-thirds of people lacking formal education.
- Language intersecting with education, a remaining gendered barrier to internet and mobile use.
- Gendered socialization in science and technology education and careers.
- Less access to digital literacy opportunities for women and girls.
- Gender-blind cyber policies and laws.
- Gender-specific risks that require consideration in digital safety policies.
- Underrepresentation of women in ICT policy making.

Although ICTs have the potential to empower women in many ways, they are embedded in norms and structures that define power and gender relations and therefore influence the extent of benefits. Addressing gendered digital inequities in ICT4D policy making requires attention to equal opportunities for women through accessibility and connectivity to services that are relevant to the context of Africa and the use of these services, as well as the availability of relevant content that is culturally appropriate and available in local languages. It requires addressing constraining factors that limit women's full participation in today's digital landscape. In sum, the journey to gender parity in ICTs is not a question of access to technology alone but rather requires addressing how ICTs can be used to facilitate empowerment—economic, professional/livelihood opportunities, political and structural reforms, and educational opportunities (Ericsson ConsumerLab 2017).

ICT and Gender Empowerment: Putting Gender in ICT4D

Research and development projects that focus on the use of ICTs to address social inequity need to apply a critical lens that attends to gender in ICT4D discourses. Often, when ICTs are discussed there is an assumption that ICTs are inherently value free and thus the question of power is disregarded. As such, ICTs are touted by most governments, donors, and nongovernmental organizations (NGOs) as empowering tools for addressing social inequity by default without engaging in a critical analysis of who and how they empower—or, in some cases, disempower. Additionally, many ICT4D discourses fail to consider gender disparities that arise from the diffusion of these technologies. As a result of this value-neutral stance, issues of power relations regarding access, adoption, use, and appropriation of technology are not adequately addressed in ICT4D projects and discourses. This lack of interrogation of power and how it plays out within the spheres of policy and practice are particularly detrimental to girls' and women's active engagement in ICT4D. This is clearly demonstrated by the fact the many ICT4D projects do not integrate gender analysis as an important component [see Steeves and Kwami (2019) on the One Laptop Per Child (OLPC) project in Ghana]. As a result, these projects fail to address adequately the needs of everyone in the targeted communities.

Although there have been some efforts by gender advocates to integrate gender and other social intersections into international and national ICT policy and ICT-led development strategies, these have either been sidelined, forgotten over time, or not seriously pursued in many cases. For example, in Nigeria, initiatives such as the Smart-Woman Nigeria and the Digital Girls' Clubs have been launched in secondary schools, yet education is not explicitly addressed in the 2012 national ICT policy (Agyeman 2007; Okonji 2015). In Kenya, there is a national plan on ICT in education as well as a strategy to identify and create "e-ready" schools, but there are no gender-disaggregated data available on the number of schools connected to the internet to measure gender inequities that may exist in the implementation of these programs. Ghana's 2015 national gender policy recognizes the gender gap in access to ICTs and digital literacies, but the policy has no clear targets in place to monitor the outlined objectives; here again, there is a dearth of gender-disaggregated data on female and male ICT access and use.

Despite these challenges in ICT policy making and the many disadvantages women face, there is evidence that, with the aid of mobile phone and social networks, many women are still able to negotiate connectivity via ICTs to allow them to do business. The mobile phone is appropriated as a GPS that allows many marginalized groups to be connected to a wider network and a host of resources that are central to their livelihood. Through the use of their mobile phones many women enact new forms of mobilities. This is supported by my research on Ghanaian market women's use of mobile phones, which shows how women traders contest and negotiate different forms of marginality (Kwami 2015, 2016). Gina Porter's (2015) study on the interconnections of physical mobility and mobile phone use in rural Tanzania and Malawi supports the fact that, because walking and the use of public transportation remain the dominant way of getting around in many parts of Africa, mobility is costly, both physically and financially.

Thus, the mobile phone becomes an extension of what Raymond Williams termed "mobile privatization" (1974), the shrinking of a social space where isolated individuals gain increased mobility. As such, one can be physically located in the marketplace or at home yet simultaneously be transported to other places (Hjorth 2005). My study of Ghanaian women traders revealed that their use of mobile phones as part of their livelihood practices depends on strong social networks that range from familial to nonfamilial relations extending beyond the mobile phone. This finding supports other studies that have noted the importance of social networks in resisting marginalization and enacting various forms of mobilities through digital tools.

Gendered Surveillance, Cyberviolence, and Cyberfeminism

On the flip side, however, are the possibilities of gendered surveillance that impact women's ability to enact many forms of mobilities. There has been a steady shift away from the utopian vision of the internet as the "new" space (cyberspace) that is neutral, egalitarian, and freely accessible and risk free to all (Nakamura 2002, 2007; Magnet 2007). Although leading scholars in the subfield of cyberviolence studies disagree on definitions,

feminists across disciplines point out the urgent need to address gendered violence against women and girls (Bailey et al. 2015; Jane 2017; Broadband Commission 2017). Other scholars are beginning to explore cyberhate and cyberfeminism as more Africans navigate public spaces online. The rapid penetration and use of mobile internet and the circulation of user-generated content make certain marginalized groups targets for cyberviolence and surveillance. Often cyberviolence and surveillance are gendered, putting women and girls and other marginalized groups in vulnerable positions in online spaces.

How does the gendered nature of cyberviolence/cyberhate constitute a new kind of digital inequity, and how is this manifested differently in African spaces online? Emma Jane (2017) has noted how "gendered cyberhate as manifest in sexualized vitriol and threats" on social platforms impacts online participation and digital citizenship, constituting a new dimension of gender-related digital inequity (186). Jane's analysis extends what Sarah Banet-Weiser and Kate Miltner (2016) have called "networked misogyny," a phrase used to describe "an especially virulent strain of violence and hostility towards women" (2015, 171). They note that online attacks on women tend to target women's appearance and sexuality, impacting women's digital participation (Crooks 2018; Jane 2014, 2017, 2018). The material impacts of gender-based cyberviolence often limit the rise of cyberfeminist and activist groups who seek to contest the normalized narratives that perpetuate patriarchy and misogyny.

In Ghana, Pepper Dem Ministries (http://pepperdemministries.com) is one such feminist advocacy group that defines its purpose as "probing, interrogating, and theorising … to facilitate learning, unlearning and re-learning of the narratives both male and females have been operating by, in order to establish a better approach to our socialization" (www.facebook.com/pg/PDMunlearningToxicNarratives). The group's members have faced a torrent of cyberhate collectively and individually, receiving negative media coverage due to their online activism. The increase in networked misogyny in online spaces requires African feminist researchers to attend to the broad interplay of cultural and systemic factors that impact women's safety in digital environments.

Decolonizing ICTs and Africa's Digital Futures

Let me now discuss the call to decolonize ICTs as I reflect on Africa's digital future. African feminisms focus on decolonization in an effort to "'undo' the roles and conditions that made Africans dependent on their colonizers, to 'unwrite' the burden of a history of imperialism that spans through centuries and to give a new language with which African women and men can progress from the racialized trauma that till this present day affects women and men albeit in different ways" (Salami 2012). Here, I reflect on why we, as Africans, are not telling more of our continent's stories, despite the increased availability of technologies to tell our own stories and present counternarratives. Today's digital technologies, such as over-the-top media services, have transformed how we produce and consume media, making it easier to distribute local content. Although it is refreshing to find a limited catalog of African music and movies on Spotify and Netflix, African content still remains at the margins of available digital content.

Scholars continue to debate the nature of today's globalized culture and in what ways forms of cultural hybridity reflect resistance or conformity to Western hegemony. The difference today, however, is that the technological barriers to creating meaningful local content are low, even though data bandwidth for streaming digital content remains expensive in many African countries and there are gender and other constraints around access and use. The major challenge is the political economy of content creation in today's digital landscape, which encourages sensational and click-bait–worthy content at the expense of content that reflects the full range of narratives of the rich diversity and stories of African identities. Thus, while today's digital technologies present opportunities for African re-presentation through storytelling across multiple media platforms, without sustainable economic models that seek to preserve as well as explore new narratives, many African countries risk losing the opportunity to tell their own stories.

Thus, it is important to heed Hayes Mawindi Mabweazara's exhortation that "the propagation of ideas around developments in digital technologies—especially their appropriation in various social settings—should not be left to the monopoly or intellectual hegemony of one region. In particular, we need to emancipate our thoughts from the 'shackles of [Western] intellectual imperialism'" (Mabweazara 2015, 6, citing Alatas 2000, 24).

Prospects and Possibilities for the Future of ICTs

As we consider the future of today's knowledge and information economy in the context of Africa, we must think about how to engage both the possibilities and challenges of the internet of things, virtual reality, and artificial intelligence because these new technologies will define our digital lifestyles.

We need to define how countries on the African continent should position themselves in ways that leverage opportunities and minimize the risks to address needs that are contextual and move beyond technological determinism. This is especially true in an era of cloud computing and big data, where users and user-generated data are monitored and weaponized by corporations, governments, and various actors. This requires a balance between protecting privacy and maximizing the utility of big data for safeguarding civil rights, ensuring fairness, and preventing discrimination, all of which have gendered implications. There is a need for civil society organizations and regulatory bodies to ensure accountability and transparency in how data are used and to advocate for the digital and privacy rights of citizens, especially marginalized groups.

Because education remains one of the significant indicators of digital inequities, there are possibilities to leverage the technologies of the future for self-paced and community-based educational opportunities in marginalized communities. ICT tools can be used with community networks and social capital in reforming how we conceive learning and education to address context-specific needs. The new digital tools of today and the future provide several opportunities to increase literacies through local and user-generated content toward the goal of engendering an active public sphere, albeit often polarized.

From Consumption to Production to Citizenship

The next phase of the digital information and knowledge economy requires a shift in Africa's engagement from consumption toward the production of digital technologies that reduce inequities. This will require that we address gender equity in science, technology, engineering, and mathematics (STEM) and information technology fields such as software design, network design, hardware development, and other technological as well as nontechnological specializations. To subvert the hegemony of the West and the East (particularly the People's Republic of China), African countries must move toward engendering locally appropriate and relevant technological solutions that scale up.

Currently, most of Africa's private and national data are in the hands of multinational digital companies in Silicon Valley, from which they can be monetized and weaponized for better or for worse. In our local contexts there are lessons to be learned from US experiences with Russian troll factories and Cambridge Analytica: "fake news," rumors, and valuable information mingle and become amplified on a daily basis through our collective and individual information networks. Disinformation campaigns, foreign interference, hate speech, and privacy issues require accountability and regulation by civil society organizations and regulatory bodies that work in the public interest. In Europe, new digital privacy laws such as the General Data Protection Regulation (GDPR) focus on increasing personal data privacy rights and minimizing harm.

Many African countries have been slow in responding to these threats. This also calls for new kinds of literacies far beyond being able to use a mobile phone, send a WhatsApp message, or post on Instagram. It requires digital literacies on how to evaluate messages that are circulated and amplified devoid of context as well as how to customize and interpret privacy settings to increase personal data privacy.

Another important shift requires a move from the "lagging behind" narrative that conflates African experiences into tropes and flattened framings that often create caricatures of our digital engagement as Africans. This calls for scholars and practitioners to engage with African innovation and appropriation with an eye for unveiling multifaceted experiences, which takes into consideration not only the inequalities relating to access to ICTs but also the ways in which digital tools are put to use in different contexts in spite of marginalization. The possibilities for the co-creation of multiple mobilities through these digital technologies also must be addressed.

Here, the role of the African media in framing digital engagement is paramount and must prioritize positive gender representations in its narrative content.

Indeed, today's digital landscape offers communication scholars and practitioners several opportunities to think more innovatively and attend to both local and global moorings of digital cultures on the continent and reflect on the role of citizens and media professionals in cultivating a public sphere that allows for diverse voices and cultural practices. I believe that despite the logics of globalization and its homogenizing forces, there are spaces to showcase and unapologetically celebrate the diversity of Africa's culture. There are so many compelling stories in today's digital age—how we tell them and who tells them matter, as voices included and excluded have repercussions for who benefits and who continues to be marginalized.

If there are lessons to be gleaned from Negroponte's One Laptop Per Child (OLPC) project, it is that we need to move away from the monolithic presumptions and assumptions that often underpin prescriptive technology-for-good projects. Such static framing of Africa's digital engagement fails to acknowledge how different people in different parts of Africa are strategically engaging the digital age, in spite of the hurdles and marginalization they face, through creative appropriations for specific needs. While African countries have their unique social histories, addressing digital inequities will require more than just inserting technology into the lives of Africans. Instead, it requires engagement and dialogue that promote collaboration and nurture mutual spaces of learning.

Future Directions: Theorizing ICT4D and Gender in Africa

Let me reiterate that structural inequalities remain and impede women's full participation in the digital economy. Greater access, use, and voice in ICTs can have a profound impact on African women's lives, can deliver significant benefits to the wider economy and society, and can support the achievement of the SDGs—that is, if the structural inequities that create these gaps in the first place are addressed.

In summary, the following challenges remain with regards to measuring, theorizing, and taking action on ICT4D and gender in Africa:

- Women's participation continues to lag behind that of men in most African contexts.
- There has been little specific attention to gender to reduce inequities.
- Perspectives from Third World and African-centered feminist research that explore the intersection of gender, development, and ICTs remain peripheral.
- Few reliable gender-disaggregated (quantitative and qualitative) data are available from African countries.
- Gender and other digital divides do not necessarily move in tandem, and gender inequity therefore requires unique and context-specific analysis.
- Decolonizing emerging and future technologies is essential to reducing gender and other inequities in Africa's digital future.
- Theory building that begins with the context of Africa will be necessary to extend ICT4D research, including gender and ICT4D.

Reducing the ICT gender gap is possible as the gap moves from access and devices to services and content. As already noted, more ICTs will not fix the gender gap or guarantee ICT parity. Rather, research shows a relationship between the global gender gap and ICT gender gap indices (Deen-Swarray et al. 2012; Gillwald, Milek, and Stork 2010; Hafkin and Huyer 2007). Countries with gender parity in education and economic and livelihood opportunities, and a high presence of women in ICT-oriented fields, have a lower ICT gender gap. As we consider Africa's digital future, there is evidence that the new generation, Africa's iGens or Generation Z, could bring solutions toward gender parity and positive change as they advocate for more girls in STEM fields and careers, despite the structural inequalities that favor men and boys.

In sum, my analysis of the literature on gender and ICT4D research in Africa shows that despite the promise of inclusion and empowerment offered by ICTs, most African women remain at the lower rungs of ICT access and use. While many ICT4D policies acknowledge the question of gender equality, they do not present a gender analysis in a meaningful and evidence-based manner and thus fail to clearly outline effective strategies and

tactics for implementation. Gender is often treated as a supplementary issue that is inserted in the policy without an actual commitment to ensure that equity is achieved in practice. So while some national ICT4D policies and strategies cosmetically mention gender, gender inequity cannot be reduced without progressive policies backed by evidence-based research.

I argue that foregrounding gender analysis in ICT4D is essential in ensuring that policies and implementation strategies are inclusive of all members of society. This analysis should be nuanced and historically grounded, must recognize intersections of class, ethnicity, geographical location, level of education, age, religion, and more, as well as the postcolonial critique of Western interventions and technologies. I concur with Gillian Marcelle, of the Gender Caucus of the World Summit on the Information Society (Marcelle 2000), who has stated that even if good information infrastructure and service delivery are in place, without explicit gender analysis and incorporation of the results into policy, programs, and projects, the benefits of ICT may bypass women (Marcelle 2002, 21).

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Citation

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