

## Research Article

# Earphones Are Not for Women: Gendered ICT Use Among Youths in Ethiopia and Malawi

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### **Abstract**

*New information and communication technologies (ICTs) are changing the lives of individuals and communities around the world. Women are facing more challenges in accessing and using, and therefore, in benefiting from these new ICTs than men are, particularly in Africa. This article examines the complex relationship between gender and ICTs from the perspective of low-literate youth in Ethiopia and Malawi, based on a wider inquiry into the role of ICTs in their lives. It first discusses the constraints that women experience in accessing and using ICTs, such as domestic responsibilities, time, mobility, and sociocultural norms. Subsequently, the article explores the gender disparity resulting from these constraints in terms of knowledge about, use of, and ownership of ICTs, as well as differences in the way men and women use ICTs. In doing so, the article argues that gendering in daily life shapes the gendering of ICT use, and therefore, that the gender digital divide is fundamentally socially constructed by a complex web of interrelated factors, making it difficult to tease out which factor is responsible for what effect.*

### **Introduction**

This article contributes to the perspective that ICT use is a social practice that can only be understood in the social context in which it takes place and, thus, to the growing critique of deterministic and technology-driven viewpoints according to which ICTs are considered neutral (Bijker & Law, 1992; Oudshoorn & Pinch, 2003). As Gajjala (2002) has argued, gender is an important concept to understand these social practices and the social contexts in which ICT use takes place. Following this perspective, both gender and ICTs are processes with a fluid and dynamic nature that are interdependent and mutually influence each other, as well as the particular context in which they are constructed. In other words, the ways in which ICTs are used by men and women reflect the sociocultural and economic contexts within which they are used (Buskens & Webb, 2009; Farrell & Isaacs, 2007; Hafkin, 2000; Huyer & Sikoska, 2003). As Silverstone and Haddon (1998, p. 60) have argued, "new technologies are defined very much in accordance with the dominant and insistently gendered character of domestic life, an insistence which is expressed in the gendering of space and time as well as in the division of labour."

In reality, persistent gender inequalities and unequal power relations have led to great disparities in access to and use of ICTs between men and women around the world, particularly in Africa (Gurumurthy, 2006; Mottin-Sylla, 2005). Huyer and Sikoska (2003) have named these disparities the "gender digital divide." However, as Hafkin and Huyer (2008)

have argued more recently, little is actually known about the real situation of women and ICTs, particularly in developing countries; especially, the perspectives and experiences of women themselves have previously received insufficient attention. This article is a response to this dearth of knowledge. It explores the gender digital divide in two African contexts through a bottom-up approach in which the perspectives and experiences of low-literate youth in Ethiopia and Malawi guide the research agenda.

The next section introduces the methodological approach of how, as part of a wider study, data was collected and analyzed. The following section briefly sets the scene of the research in terms of population, literacy rates, and ICT penetration. Subsequently, the article discusses the most important constraining factors for women in Ethiopia and Malawi to access and use ICTs, such as domestic responsibilities, time, mobility, and sociocultural norms. The article continues with a discussion of the resulting gender digital divide, particularly in terms of the difference in knowledge about, ownership of, and experience with the use of ICTs, as well as the difference in confidence while interacting with a digital camera. Finally, the last section concludes with an overview of the main research findings.

### Methodological Approach

The findings discussed in this article are part of a wider inquiry into the role of ICTs in the lives of low-literate youth in Ethiopia and Malawi (Geldof, 2010). The particular aim of this study was about how low-literate youth in Ethiopia and Malawi understand the social construction and interplay between literacy and ICTs. The study uses the term “low-literate” to signify individuals at the lowest end of the literacy scale, ranging from those who completely lack literacy skills to those with only limited literacy skills (Wagner, 1995). Sub-Saharan Africa was chosen as the main focus because of the low ICT penetration (ITU, 2006) and low levels of literacy; the average literacy rate for 2000–2006 was 62% (71% male, 53% female; UNESCO, 2008). The research was specifically designed to draw upon understandings from different parts of Africa; not only were two different countries chosen, but in each country, both an urban and a rural research location were selected because of the differences

between them in literacy levels and access to ICTs. Ethiopia and Malawi both score low on the Human Development Index, 169 and 164 out of 177, respectively (UNDP, 2007), and they also both have low adult literacy, as well as low ICT penetration rates.

The diffusion of literacy skills in developing countries is correlated to a range of interrelated demographic variables, such as age, poverty, educational level, geographical area (urban or rural), and gender (Egbo, 2000; Stromquist, 1999; UNESCO, 2005; Wagner, 2009; Wagner & Kozma, 2005). The analytical framework of this study was based on these variables, and although all of them were taken into account, the study predominantly focused on the last two variables as analytical constructs, exploring how literacy practices and ICT use correlate with gender and geographical areas. The gender variable generated a wealth of data about the relationship between gender and ICT use that is further explored in this article.

In the context of four research locations, urban Nazret and rural Shakisso in Ethiopia and urban Zomba and rural Ntaja in Malawi, a qualitative multiple method approach was employed. The three main methods used in the field research were interviews ( $n = 354$ ), focus groups ( $n = 34$ ), and digital camera interaction ( $n = 67$ ). In total, I interacted with more than 550 young people, with an approximately equal gender balance in both rural and urban areas. Each group discussion consisted of around six participants and was as homogenous as possible by grouping according to gender and age (Conradson, 2005). The interviews lasted about 1–1.5 hours, and the group discussions lasted 1.5–2 hours. They were undertaken in different local languages with the help of a male translator (Amharic and Oromo in Ethiopia; Chichewa in Malawi). Furthermore, place played an important role in shaping a research setting—in other words, where an interview or focus group was held made a difference (Valentine, 1997; Willis, 2006). Therefore, as much as possible, a private setting was chosen over a public one to undertake the interviews and group discussions.

The interview questions were particularly focused on participants’ current ICT and literacy practices, as well as on their future ambitions and ideas about future technologies. As a supplement to the data from the in-depth interviews, focus groups were

also employed. These guided group discussions were intended to generate additional understanding of participants' experiences and beliefs about their daily activities, literacy skills, and ICTs. An important component of the interviews and focus groups was a set of plasticized ICT cards that depicted a range of different ICTs and ICT-related technologies (ranging from radio, television, and telephone to computer, PDA, and iPod). These cards were initially used to explore participants' knowledge and appreciation of ICTs by letting them rank the cards, but eventually, they became a central point of reference in the discussions. Moreover, participants were given opportunities to use a digital camera to explore how they interacted with the technology, given their limited reading and writing skills, rather than necessarily with the purpose of sharing their realities through photographs, a method that is sometimes referred to as "photo voice" (Singhal & Rattine-Flaherty, 2006).

With the help of a database specifically designed for this research, the wealth of data that resulted from the field research was subsequently analyzed and organized into conceptual categories in light of the analytical framework's predefined variables. The findings specifically relating to the gender variable are discussed in the remainder of this article. To adequately represent the realities of those who participated in the research, quotations from participants are used throughout the text to give the reader an understanding of how meanings were expressed in participants' own words (Baxter & Eyles, 1997). Each quotation is identified by a label with the participant characteristics (location-age-gender), sometimes preceded by "FG," for focus group participants.

## Research Contexts

Given the importance of context to understand literacy and ICT practices, this section first sets the scene of the research with a brief description of the two research countries in terms of population, literacy rates, and ICT penetration.

Ethiopia has a population of 73 million people, 45% of whom are under the age of 15, and only 3.2% of whom are over 65 years old (Central Statistical Agency, 2007). The majority of the population lives in rural areas (UNDP, 2007), and as a consequence, Ethiopia's economy is heavily dependent on agriculture, with coffee as the major export com-

modity. For a long time, Ethiopia has had one of the lowest literacy rates in the world; in 1974, it was estimated to be only 7%. According to more recent statistics, the current adult literacy rate is around 36% (50% male, 23% female), with a youth literacy rate of 50% (62% male, 39% female; UNESCO, 2008). The ICT landscape in Ethiopia is greatly determined and controlled by state-owned monopolies, and it is widely argued that these constitute a major stumbling block for innovation and widespread access to ICT services, which possibly explains why Ethiopia has one of the lowest telecommunication penetration rates in Africa, particularly in terms of mobile phone subscribers (James & Versteeg, 2007; Rice, 2005). Furthermore, according to the 2005 Demographic and Health Survey, 33.7% of Ethiopian households possessed a radio (75.6% in urban areas and 26.6% in rural areas), and only 4.9% had a television (33.1% in urban areas and 0.1% in rural areas; Central Statistical Agency, 2005).

Malawi has a population of 13 million people, and with approximately 109 persons per square kilometer, it has one of the highest population densities in Africa (National Statistical Office, 2008). The majority of the population lives in rural areas (83%), and Malawi's economy is heavily dependent on agriculture, with tobacco as the major export product (UNDP, 2007). Approximately 47.1% of the population is under the age of 15, and only 3% of the people are over 65 years old (*ibid.*). According to recent statistics, Malawi has an adult literacy rate of 60.9% (90.5% urban, 58.7% rural) and a youth literacy rate of 76.3% (male 82.1%, female 70.7%; UNESCO, 2005). The ICT landscape in Malawi was controlled and restricted for a long time by the authoritarian rule of Dr. Banda. Under Banda, information was defined and strictly controlled by the government, and those undermining the authority of the government risked imprisonment for up to a life sentence (Sturges, 1998). Despite progress and transformation since the Banda era, current telecommunication penetration rates in Malawi are still below African averages, with 1.26 main telephone lines, 7.55 mobile subscribers, and 1.00 Internet users per 100 inhabitants (ITU, 2006). Furthermore, radio penetration in Malawi is significantly higher than television penetration. Compared to 310 radios per 1,000 inhabitants, there are only 7.4 television sets for every 1,000 inhabitants (ITU, 2006).

## Gendered Constraints to ICT Use

The research context discussed in the previous section greatly influences the way in which both literacy and ICT practices are shaped. This section explores the constraints that women in this context face in accessing and using ICTs. It builds on six gender-based constraints to women's use of ICTs identified by Huyer and Mitter (2003): literacy and education, language, domestic responsibilities and therefore time, geographical location of facilities, content, and sociocultural norms. These gender-based constraints all mutually influence each other, which made identifying the interrelationships among them in our study rather complex. For example, the geographical location influenced the educational possibilities, and in turn, education influenced language skills.

### **Domestic Responsibilities and Time Limitations**

Several scholars have drawn attention to the contrasts in domestic responsibilities between men and women in developing countries, as well as to how, as a result of this, the time of women is more constrained than that of men (see, for example, Gibbons, 2004; Hafkin & Taggart, 2001; Nicholl, 2006; Puchner, 2003; Rathgeber, 2000; Stromquist, 1999). These time limitations have wide-reaching implications for female participation in, for example, education and literacy programs (Puchner, 2003; Stromquist, 1999). As Puchner (2003) argues, it is often forgotten that, unless others take over some of the domestic responsibilities from the women, education only adds an extra time burden for them. The following participant reinforced this impact of time constraints on education:

*The reason why we are less in position is because we are too occupied by housekeeping activities compared to the boys. Parents decide that it is the women who should do the housekeeping work. We don't have enough time to study for our education. (FG Shakisso-15-F)*

As a result of these household dynamics, the exposure to and use of ICTs by women are influenced and restricted by time constraints in the same way as their participation in education and literacy programs; women have less time to engage with ICTs than men due to the social division of labor (Hafkin & Taggart, 2001; Kleine, 2007; Nicholl, 2006; Rathgeber, 2000; Silverstone & Haddon,

1998). This is, for example, illustrated by the explanation the following participant gave for her low ranking of an ICT card:

*Because girls don't like listening to the radio. They don't have time to listen to the radio. When they are back from school they play netball and then they have to do domestic works, so they don't have time to listen to the radio. (Zomba-15-F)*

### **Geographical Dependency and Mobility**

In both fieldwork countries, the use of ICTs was geographically dependent, which means that, as a result of different physical and social factors, it was confined to certain places. The main physical geographical factor limiting the use of ICTs was the reliance on the power grid or broadcast and communication networks, which was mostly disadvantageous to the rural areas. Consequently, ICTs agglomerated more around places where a power grid, as well as the necessary broadcast and communication networks, were available; in other words, more in urban than in rural areas. For example, Ntaja is a rural town in Malawi stretched along an asphalt road with a power grid running parallel to the road. As a result, ICT use had agglomerated along this road. Because of this, "at the road" was often mentioned as the place where participants had encountered ICTs, as illustrated by the following quotes:

*At the road someone shows videos. (Ntaja-13-M)*

*I saw some people were making calls at the road. (Ntaja-10-M)*

Various scholars have highlighted how women face gender-related constraints to their mobility (Hafkin & Taggart, 2001; Hambly Odame, 2005; Ling & Haddon, 2002; Nicholl, 2006; Stromquist, 1999). The lives of women tend to be more geographically restricted to the direct environment of their homes, either because of their domestic responsibilities or because of other social influences that restrict women's movement outside the home, particularly in rural areas. The following quotation, for example, illustrates how the mobility of this female participant was more restricted than that of her brother, who could "move wherever he likes":

*We don't have equal opportunities, for example after school I am occupied with housekeeping, while my brother can move wherever he likes. (Shakisso-18-F)*



*Young man with earphones in Zomba.*

*Man with radio in Shakisso.*

**Figure 1. Male ICT Stereotypes.**

Source: Zomba-13-M (left); Author (right).

### **Sociocultural Norms**

The relationship between technology and masculinity is well established (Kline & Pinch, 1996; Obayelu & Ogunlade, 2006; Thioune, 2003). For example, Obayelu and Ogunlade (2006) note how, in Nigeria, women in their study considered the word “technology” to have a masculine connotation. Furthermore, Thioune (2003) has found during research in other African countries that women felt that ICTs were “instruments not made for them.” This research further reinforces how gender stereotypes apply to the use of ICTs. One of the stereotypes that the field research revealed was earphones and small radios as “toys for boys” (Cooper, 2006), as depicted in Figure 1 and illustrated by what the following participants said:

*These wires are the ones that boys put in their ears and connect with the radio. (Ntaja-15-F)*

*I don't like this radio, because they are for young men, not for women like me. (Ntaja-19-F)*

In a similar vein, Spitulnik (2000) found in Zambia that gender identity was a significant factor in how and to what degree people engaged with radios, as men owned and controlled them more than women.

Participants expressed that women who did not comply with these gender stereotypes risked being ostracized, something illustrated by the following participant's explanation of why she did not like earphones:

*I don't like earphones. When you are using them, people will laugh at you at home. Because at home these are only used by boys and not by girls. (Zomba-13-F)*

As this participant was from a rural area, but was visiting relatives in the urban area, her reference to “at home” demonstrates that these gender stereotypes were more prevalent in rural areas, which also explains why all female participants who expressed the “earphones stereotype” were from a rural area.

### **Gendered Content**

Another gender-based constraint to ICT use revealed in the study was that the nature of the available ICT content was more appealing to men than to women. Cooper (2006) has, for example, argued that current educational software is more appealing to boys. Sport-, war-, or space-oriented software featuring competition is an example of content that Cooper (ibid.) termed a “boy-toy”; that is, something more appealing to men than to women. Simi-



Figure 2. Video Show Program in Ntaja.

Source: Author.

larly, the informal video shows that are widespread throughout Malawi predominantly show action movies in their programs (see Figure 2), which are more appealing to men than women. For example, the explicit reference to “boys” and “war” movies in the following quotation illustrates that watching a “war” (action) movie was considered a male activity:

*Boys go there and watch war movies. So when they come back from there, they want to try what they have watched.* (Ntaja-16-M)

Additionally, the number of times participants in Malawi referred to action or Nigerian movies in relation to television or video shows further supported this gender difference in terms of ICT content. Where 40% of male participants brought up action movies, only 10% of female participants referred to this genre. At the same time, 15% of male participants brought up Nigerian movies, compared to 12% of female participants. As these numbers only account for participants who brought this up of their own volition, and as the women were less familiar with television and video shows in the first place, the numbers might not be completely representative. However, the following quotation further reinforces a female disinterest in action movies, as opposed to an interest in the less violent Nigerian movies:

*I don't like to watch violence. I like watching Nigerians.* (Zomba-13-F)

It was difficult to determine the underlying cause and effect for this gender difference. On the one hand, women could be discouraged from visiting

the video shows because they were not attracted to the action movies shown. On the other hand, the content shown at video shows could have gradually become more biased toward what appealed to male patrons because not many women visited the video shows for other reasons, such as time and mobility. Alternatively, the two reasons could have interwoven and strengthened each other.

### Education

Gender inequality in education in developing countries has widely been discussed in the literature (see, for example, Huyer & Sikoska, 2003; Rose & Al-Samarrai, 2001; Swainson, 2000). There is general agreement that women’s lower levels of literacy and education is one of the factors that contributes to the gender digital divide, the evidence for which was reinforced by this research (Hafkin & Taggart, 2001; Hambly Odame, 2005; Huyer & Mitter, 2003). This subsection looks into the reasons for the gender inequality in education, as well as into why this negatively affected ICT use by women.

The underlying reasons for the gender divide in education were similar to some of the gender-based constraints to the use of ICTs discussed so far. For example, the gendered domestic responsibilities and time constraints had a limiting effect not only on the use of ICTs, but also on female participation in education. Furthermore, women’s limited mobility implied that the relative distance to the nearest school influenced their chances of attaining or succeeding in education more than it did men’s. Sociocultural norms were another factor influencing the gender divide in education and, thus, literacy.

The reason why the following participant did not go to school when she was younger exemplified the impact of cultural beliefs on education:

*My parents didn't allow me to go to school. They believe that if they send girls to school, they will become prostitutes. (Shakisso-16-F)*

Similar to Farrell's (2004) conclusions, there was a strong perception throughout the field research that many ICTs were only meant for educated and literate people, suggesting that they were not user-friendly for uneducated, low-literate users. Participants, for example, explained:

*If a person is not educated, he can't use radio. (Zomba-13-F)*

*I can't imagine myself using computer, you know why, because I am not educated. (Nazret-16-M)*

Furthermore, due to a strong influence of English in education in both countries, being educated was considered synonymous with being literate in English. At the same time, in a market that was dominated by ICTs with English labels and operating instructions, English was perceived as the language of technology. Therefore, as the following participant explained, a lack of English skills was considered as an important barrier to the use of ICTs:

*You should be able to understand and read English, otherwise it is too difficult to use mobile phone and computer. (Nazret-17-M)*

In other words, ICTs were perceived as tools for the educated, English-speaking elite. This further explains how the gender inequality in terms of education and language skills indirectly disadvantages women, who tend to be less educated and proficient in English, in their use of ICTs, which in turn contributes to the gender digital divide.

## **Gendered Use of Information and Communication Technologies**

The gendered use of ICTs was reinforced and expressed by participants in different ways throughout the field research, supporting arguments that there is a gender digital divide in which rural women are most disadvantaged (Gurumurthy, 2006; Hafkin, 2000; Huyer & Sikoska, 2003; Mottin-Sylla, 2005). This section explores this gender disparity in light of the context and constraints that were discussed in previous sections. It first discusses the evi-

dence that men had better knowledge about, more ownership of, and more experience using ICTs than did women. It then explores the gendered nature of ICT-related businesses. Finally, it discusses differences in the ways that men and women used the ICTs, particularly in terms of how participants interacted with a digital camera.

### **Disparities in ICT Knowledge, Use, and Ownership**

The discussions with participants about the ICT cards gave insight into their familiarity with a range of ICTs, such as whether they knew them, where they might have known them from, and whether they had ever used them before. In line with the gender-based constraints discussed in the previous section, this revealed a difference in familiarity with ICTs between male and female participants, as well as between participants from rural and urban areas (see Table 1). As women were less familiar with ICTs than men, they presumably also had less experience with ICTs. Moreover, even among the participants who recognized an ICT, female participants expressed less experience with its use than their male counterparts. Ninety-two percent of male participants indicated that they had operated a radio themselves, whereas only 78% of female participants had ever operated one. The data further indicated that ICTs were more likely possessed by men than by women, which is similar to the gender difference in mobile phone ownership that Adam and Woldekidan (2005) found in Ethiopia. Whenever participants gave an indication about the owner of an ICT under discussion, they referred to a man, such as a male relative, in 81% of the cases, and to a woman in only 19% of the cases.

Rural women were the most disadvantaged in terms of ICTs, and urban men were the most advantaged (Hafkin & Taggart, 2001; Hambly Odame, 2005; Spitulnik, 2000). This inequality suggests that ICT use is divided along similar lines as literacy, by factors such as gender and geographical area (Stromquist, 1999; Wagner & Kozma, 2005). Both these disparities are a result of the gendering in daily life shaping the gendering of both literacy and ICT use, as well as of the contexts in which the ICTs are used (Gajjala, 2002; Silverstone & Haddon, 1998).

For example, one of the underlying reasons that explains why female participants were less familiar

**EARPHONES ARE NOT FOR WOMEN**

*Table 1. Participants' Recognition of ICT Cards. Source: Author.*

	Male			Female		
	Urban	Rural	Total	Urban	Rural	Total
Radio	98%	98%	98%	94%	87%	93%
Portable stereo	98%	98%	98%	98%	98%	98%
Television	95%	90%	93%	94%	74%	84%
Telephone	94%	80%	87%	94%	62%	78%
Mobile phone	96%	89%	93%	99%	78%	88%
Computer	84%	28%	55%	52%	7%	29%
Laptop	73%	20%	45%	34%	4%	19%

with ICTs than their male counterparts is the limited mobility of women combined with the geographical dependence of ICTs (see previous section). Thanks to these two factors working in concert, women had less exposure to ICTs that were tied to certain geographical locations. This disparity was exemplified by the difference in ICT knowledge of a brother and sister who were interviewed in rural Malawi. Whereas the 18-year-old sister recognized only three of the ICT cards, her younger brother was able to recognize as many as 19, demonstrating that even when men and women grew up and lived in the same environment, they had different exposures to ICTs.

Furthermore, the impact of women's limited time and mobility for using ICTs was evident from the male-dominated audiences in the video shows (see Figure 3). Not only was it socially unacceptable for women to be seen there (Million, 2008), but they also did not have as much time and freedom to go and travel to the video shows, which were mostly located in the towns and commercial centers. The research further showed how participants' knowledge of ICTs was partly based on encountering them in the "virtual space" of television and movies without ever having seen them in reality, and therefore, how the video shows added to the ICT knowledge of their visitors. Consequently, the knowledge about the functionality of these ICTs was partly constructed based on how they were used within these virtual contexts. For example, all six participants who correctly recognized the ICT card depicting a fax machine indicated that they had only seen it on television or in a movie. Furthermore, one male participant in Nazret, who correctly recognized

17 cards, knew six of the ICTs only from seeing them in movies. The gender imbalance of the audiences at the video shows therefore played a role in the observed gender differences regarding ICT knowledge. From the number of times ICT cards were recognized as something from a movie or television (70% male participants; 30% female participants), it was evident that women had less exposure to television or movies and, therefore, to the ICTs displayed therein.

**Gendered ICT Businesses**

Another example of the gender digital divide was that ICT businesses were mostly a male affair, reflecting how typical gender roles within the wider sociocultural context influenced the ways in which ICTs were used (Huyer & Sikoska, 2003). Those who referred to the business potential of ICTs as a motivation in their card rankings were mostly male. In Malawi, for example, 10% of male participants alluded to the business potential of ICTs, compared to only 1% of female participants. This resonated with the observation that ICT businesses were mostly a male affair, such as the cameramen and the video shows dominated by male visitors and mostly run by enterprising young men as discussed before (Assefa, 2006; Million, 2008).

Furthermore, the demand for repairing ICTs has led to a thriving repair industry (Best & Kenny, 2009). For example, the introduction of mobile phones has created new business opportunities related to their maintenance. This ICT repair industry was also a male-dominated business, which was reflected by the difference among male and female participants expressing an ability or interest in learning how to repair ICTs. In Malawi, 22% of male par-



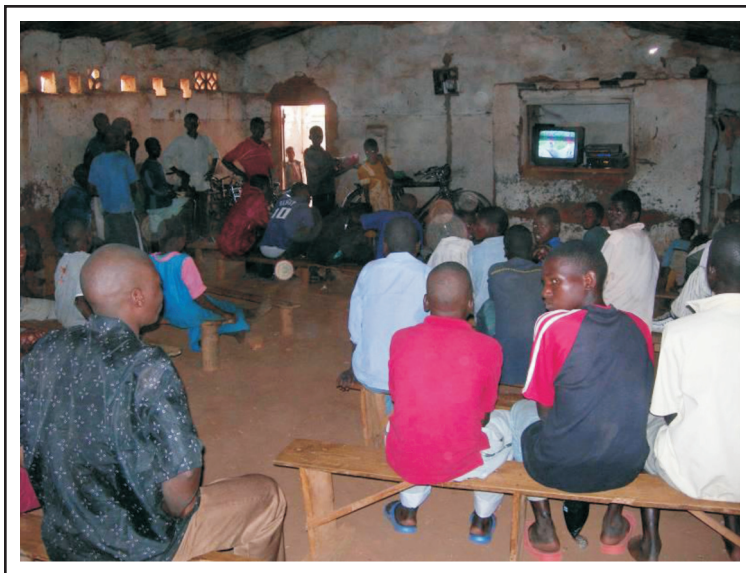


Figure 3. Male Visitors at Video Show in Ntaja.

Source: Author.

ticipants expressed an interest in repairing ICTs, compared to only 5% of female participants. This reinforced Kline and Pinch's (1996) observation of how repair of technologies formed a defining element of masculinity, and thus, of gender identity.

### Confidence with ICT Use

The gender digital divide was further illustrated by the different ways in which men and women interacted with ICTs. For example, there was a clear gender difference in how comfortable participants were interacting with a digital camera. Female participants were shyer and less confident in their interaction than male participants. Moreover, female participants were less inclined to ask for help when they faced a problem with the camera, as is illustrated by the following comment:

*When I was capturing I was not able to see the pictures. I was too shy to come and ask. (Ntaja-14-F)*

The female participants were also more concerned about doing it right, as illustrated by my observation about a participant who was looking for approval about the pictures she had made:

*Girl comes back with the camera at some point to ask me whether she took the pictures the way I wanted. (Field notes Ntaja, 11/06/07)*

As a result, female participants returned with the camera much sooner and with fewer pictures than their male counterparts, and sometimes they had to be encouraged to continue interacting with the camera. Although seemingly a consequence of their lacking confidence, this could also be related to the time constraints of female participants. As explained in the previous section, they might have had other duties waiting for them, unlike the male participants, who therefore had more time to play with the camera. As a consequence, despite there being an equal number of male and female participants, in Malawi for example, about 1,650 of the photographs were captured by male participants, compared to only 750 by female participants.

A possible reason why women were more apprehensive about using ICTs than men is that they were both less familiar with them and less used to interacting with them.

### Conclusion

This article explored the gender digital divide in Ethiopia and Malawi based on the perspectives and experiences of low-literate youth as a response to the dearth of knowledge about the real situation of women and ICTs in developing countries (Hafkin & Huyer, 2008). It first of all untangled how gendering in daily life, such as existing gender inequalities and unequal power relations, has thrown up barriers for women to access and use ICTs, resulting in a number of gender-based constraints, such as domestic responsibilities, time, mobility, and sociocultural norms. For example, existing gender norms in terms of domestic responsibilities gave women less time to interact with ICTs and, moreover, restricted their mobility. Due to this limited time and mobility, they had less exposure to ICTs beyond the vicinity of their homes. These constraints made up a complex web of interdependent factors, which made it difficult to tease out which precise factor was responsible for what effect.

These gender-based constraints are at the root of the gender digital divide and therefore help to explain disparities in access and use of ICTs, as evidenced by men having better knowledge about, more ownership of, and more experience with the use of ICTs than women did. Moreover, there were differences in the ways that men and women used ICTs. For example, sociocultural norms had introduced gender stereotypes that defined the use and ownership of particular ICTs, such as earphones and small radios, as a form of masculinity (Kline & Pinch, 1996). Consequently, women were less likely to be using these ICTs, as doing so would carry a social stigma.

By demonstrating how the contexts in which ICTs are introduced determine the way men and women use them, as well as how new meanings and uses can evolve in different contexts, the findings of this study reinforced that the relationship between gender and ICTs is fundamentally socially constructed (Huyer & Sikoska, 2003). In other words, the relationship between gender and ICTs is not inherent in the design of an ICT (Bijker & Law, 1992; Oudshoorn & Pinch, 2003). Therefore, changing an ICT design is not enough to change the gender digital divide; the gendered context of use also needs to change to provide an environment in which women have equal opportunities to use ICTs.

There are many interesting avenues for future research to explore new ways to create an information society that is more inclusive of women. For example, more research into existing gender ICT stereotypes in different African contexts could inform future designs and plans to make ICTs more attractive for women in those contexts. Furthermore, new ways could be explored in which ICTs could themselves be used to influence the gendering in daily life and, in that way, change existing gender norms. ■

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