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Opportunities and Challenges for Poverty Reduction

Permalink

ISBN

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Publication Date

Copyright Information

The Use of Mobile-Money Technology among Vulnerable Populations in Kenya

*Opportunities and Challenges
for Poverty Reduction*

NDUNGE KIITI AND JANE WANZA MUTINDA

The significant role that technology can play in human development is undeniable. Increasingly, development practitioners argue that mobile technology has become a key ingredient for addressing poverty in developing countries (Handapangoda and Kumara 2013; Mbogo 2010; Boateng et al. 2012; Wallis 2011). Yet, technology can also be a tool or instrument that facilitates exclusion of certain populations within a society, hindering the very process of development it was set out to achieve (Papaioannou 2011). In reviewing literature, questions of how technology is benefiting marginalized populations, whether based on gender (Wallis 2011; Boateng et al. 2012) or issues around disability (Seale et al. 2010), are increasingly raised.

The opportunities and challenges of technology were highlighted in a qualitative study that investigated the use of mobile-money services (e.g., M-PESA and Zap) and platforms by vulnerable populations in Kenya, and the impact on them, as tools for poverty reduction. Among the twenty-one women's groups that were part of the first phase of the study, we found that mobile-money technology can facilitate social networks and economic development with limited and less pronounced challenges. However, during the second phase of the study, the experiences of persons with visual impairment were extremely different. The findings showed that stigma, fraud, lack of privacy, dependency, pin number security, and overall inaccessible technology limited their ability to fully benefit from the mobile-money services, often perpetuating poverty or loss.

The United Nations Development Programme (UNDP) posits that "a nation's ability to solve problems and initiate and sustain economic growth

depends partly on its capabilities in science, technology and innovation" (2005a: 20). In Kenya, mobile-money technology has been hailed as the most revolutionary innovation of this century. Buku and Meredith have enthusiastically embraced this change:

> The recent and widespread availability of affordable mobile phone tech-nology in developing countries has paved the way for the development of a number of mobile money and electronic remittance services. One of the most successful of these services is Safaricom's M-PESA program, launched in the East African nation of Kenya in March 2007. Since then, the program has successfully enrolled 15.2 million users, transferred more than US $1.4 trillion in electronic funds, and contributed significantly to poverty allevia-tion and financial inclusion efforts in rural Kenya. (2013: 375)

But studies have also shown that there is a correlation between social and digital exclusion. Individuals who tend to be socially excluded, whether it's based on some form of social stratification, will frequently be vul-nerable to the digital divide (Seale et al. 2010; Warshauer et al. 2004). The question is, how can we ensure these mobile-money technologies are more inclusive rather than exclusive? Drawing on research with women's groups and persons with visual impairment (VI), this chapter examines some of the opportunities and challenges posed by this revolution.

In the Eastern Province of Kenya, poverty and inequalities are stagger-ing. According to the Central Bureau of Statistics, the Eastern Province is one of the poorest regions of the country (as cited in UNDP and UNIFEM 2005). This problem especially affects women. These gaps and inequal-ities are evident in access and control of resources, economic opportu-nities and power, and political voice. In her gender-focused research, carried out in Makueni District, Ndambuki found that poverty, among other issues, was defined by politicians and community leaders as the greatest challenge facing Kamba women (2010). This, she argues, supports other studies by researchers who posit that women's participation in the political arena is often undermined and limited by economic pressures (Ndambuki 2010; Nasong'o and Ayot 2007).

Additionally, when it comes to property ownership, men own 95 per-cent of all land holdings in Kenya, while women own only 5 percent (UNDP and UNIFEM 2005). The government of Kenya describes that one of the main problems in achieving gender equity is the unwillingness of some communities to change entrenched cultural beliefs, such as land ownership by women (as cited in UNDP and UNIFEM 2005). Since the ownership of land and property often facilitates access to collateral and other resources, this challenge frequently translates into high levels of poverty, mainly concentrated among women in rural areas. Recognizing

women's limited and sustainable economic improvements, Vinya wa Aka Group (VwAG)[1] used their experience as a catalyst to train and empower women in the rural areas of the Eastern Province of Kenya, covering districts such as Machakos, Makueni, Mwingi, Kitui, Embu, Mbeere, and Meru.[2] VwAG is a registered women's group, from Eastern Kenya, whose members hold residence in both urban and rural settings. Hennink, Kulb, and Kiiti describe this group as

> a Kenyan women's group that initiated an expanded community-based model of microcredit which goes beyond a basic ROSCA to include mechanisms for investment and social support. Vinya wa Aka is not affiliated with any formal microfinance institution (MFI) scheme or banking institution. It thereby challenges the traditional top-down model of development by recognizing the bottom-up model, based on the ABCD framework that builds on community assets utilized by women's groups. This approach reduces dependency on external aid and technical assistance and may be more sustainable in addressing community development. (2013: 1029–31)

In development, training has often been used as a tool for capacity building and empowerment (Eade 1997). Because women are often vulnerable to external "shocks," the training facilitated the ability of women to create wealth with the aim of reducing poverty within their families and communities. This included investing in high returns using sectors like the Nairobi Stock Exchange, mutual funds, endowment funds, and bonds. It was during this process that mobile-money technology increasingly became popular in Kenya.

Within the women's groups, evidence showed that mobile-money technology played a role in facilitating group contributions, loans, and other social aspects of the group process. However, the extent of the mobile technology's impact was not clear. This observation was a catalyst to the first phase of the research, which investigated the use of mobile-money technology among the twenty-one women's groups in Eastern Kenya. One of those women's groups was made up of individuals with visual impairment. Their special and expressed distinct needs, in relation to mobile-money technology, facilitated the second phase of the research, among persons with visual impairment.

Why Persons with Visual Impairment?

Although the statistics have not been confirmed, Kenya has a fairly large population of persons with visual impairment, reported at just over half a million (Kenya Union of the Blind, 2009). Research has shown a direct

correlation between poverty and persons with a disability. There is often a causal effect, which prompts the question: does poverty lead to the disability, or does the disability perpetuate poverty?

Research studies in three countries have drawn attention to the poverty/visual impairment link (Kuper et al. 2008). Poverty is often shown as a cause or consequence of poor health (ibid.) affecting the most vulnerable populations. For example, childhood blindness is correlated with socioeconomic development (Njuguna et al. 2009). In Kenya, only 21 percent of children with visual impairment attend school (Ministry of Education 2009). Additionally, visual impairment has a gender aspect in Kenya. Statistics show that visual impairment impacts 55 percent females and 45 percent males (Kenya Union of the Blind 2009). Health, education, or gender, when ignored, can affect poverty especially among the visually impaired.

There is an increased need for people with visual impairment to have access to technology available to the general public. Failure to provide access will only continue to deepen the divide between the sighted population and those with visual impairment (Gill 2002). Additionally, poverty hinders accessibility, which is more pronounced among vulnerable populations. A study carried out in Kenya confirms that M-PESA[3] services tend to benefit individuals of higher, socioeconomic status (Mbiti and Weil 2011, increasing the negative implications for persons with visual impairment. Seale, Draffan, and Wald have argued that "unequal access to technologies serves to exacerbate social stratification, whilst equal access can reduce marginalization" (2010: 445).

Theoretical Frameworks Informing the Study

The concept of "empowerment" has been central to the work of Vinya wa Aka and a motivation to train and share knowledge with the women in the rural part of Eastern Kenya. Public health specialist Nina Wallerstein defined empowerment as a process that

> influences people's ability to act through collective participation by strengthening their organizational capacities, challenging power inequities and achieving outcomes on many reciprocal levels in different domains: psychological empowerment, household relations, enhanced social capital and cohesion, transformed institutions, greater access to resources, open governance and increasingly equitable community conditions. (2006: 29)

Anthropologist and development practitioner Deepa Narayan builds on this idea by suggesting that empowerment is increasing the assets and

capabilities of poor people (2002: 14). A research study, carried out by MAP International[4] and Emory University, found that empowerment is often linked with human agency (Hennink et al. 2009). In his book *Development as Freedom,* economist and Nobel Prize winner Amartya Sen talks extensively about human agency and freedom. He defines agency as the opportunity for people to make choices and to act to improve their situation in life through various avenues. This means people have the freedom to define alternatives and not be externally restricted to any single course of life (Sen 1999). However, extensive literature illustrates that a clear understanding of empowerment must also consider the relationship between power and agency in a given situation (Gaventa 2004; Freire 1984; Alsop and Norton 2004). What often drives the "push-and-pull" factors for empowerment within societies is the imbalance of access or power.

Development economist Sabina Alkire builds on these ideas and argues that agency is not just one-dimensional but must be considered with respect to different dimensions of well-being (Alkire 2007). This concept of a multidimensional approach to well-being parallels the model used by Vinya wa Aka to help women address issues of poverty through resource mobilization and investment. A key part of this empowerment is the access and use of mobile-money services.

Thus, this study has extensively used the concept of empowerment to inform and guide the process and analysis. VwAG approaches their work from the Freirean perspective that

> [p]eople have ideas and are able to engage in critical reflection. This perspective thrives on the fact that if people are given the opportunity to understand and express themselves, they can offer solutions. Freire argues that this process of critical reflection, dialogue, and conscientization ultimately leads to awareness-raising among individuals and the community. It is the process of the facilitator which embraces the true reality of the community. (Kiiti and Nielsen 1999: 66)

This reality is very relevant for women and persons with visual impairment in Kenya, whether it is the opportunity for empowerment or the challenge of disempowerment.

Mobile-Money Services and Poverty Reduction in Kenya

In Kenya, the use of mobile-money services has become increasingly diversified as the growth rate has dramatically risen. For example, two of the largest services are M-PESA (Safaricom) and Zap money (Zain). M-PESA is "an electronic payment and store of value system that is accessible

through mobile phones" (Mas and Morawczynski 2009: 1). Zap money has been called a "mobile wallet" because it provides more functions, not just the money-transfer service (Mas and Radcliffe 2010). In rural Kenya, M-PESA has extended financial services to large portions of the population that have no access to the banking industry (Mas and Radcliffe 2010). The predications are that these services will expand and become accessible to parts of the country that have often been excluded from financial, banking, or other services.

In his book *The Poor and Their Money,* Stuart Rutherford (2009) highlights the importance of the poor and vulnerable having access to appropriate money-management services. He also goes on to argue that practitioners need to learn from these examples. These basic "merry-go-round" models of savings, sometimes known as rotating savings and credit associations (ROSCAs), don't often address or document what Collins, Morduch, Rutherford, and Ruthven (2009), in their book *Portfolios of the Poor: How the World's Poor Live on $2 a Day,* describe as the surprisingly sophisticated financial lives of the poor. This process often includes creating complex portfolios of saving and borrowing within their context. Additionally, the merry-go-round approach, with its economic-driven outcomes, doesn't always capture the wealth and dynamic interactions from the social, cultural, educational, psychological, emotional, and spiritual aspects. This makes it very difficult to really measure the extent that mobile-money services impact poverty.

All twenty-one women's groups trained and mentored by VwAG were working to address poverty from a social, economic, and psychological perspective. Most of the groups were engaged in some form of investment (mainly shares and land ownership), savings accounts, merry-go-round, social/spiritual support, and microfinance projects mainly in rural areas. Currently, all the groups have savings accounts – as a group and many as individuals – and some form of financial investments. Additionally, most of the groups continue using the merry-go-round system for sharing resources and reducing poverty within their families and communities. The groups are also extensively involved with community outreach.[5]

Most of the visually impaired respondents were from rural areas but living in more urban settings because of work or their schooling. In general, it would be hard to access and engage the visually impaired in rural areas because of stigma, discrimination, and other barriers.

All study participants, registered for mobile-money technology services, used M-PESA. There was emphasis that M-PESA was the initial service introduced to rural and urban areas, which led to its growth and popularity. This was expressed by most groups:

> We use M-PESA . . . M-PESA was the one which came first and earlier. You
> found that many people were in Safaricom, so . . . there was no other option
> other than registering with M-PESA.
>   . . . Many people are in Safaricom since it was the first one in Kenya.

Very few (less than 5 percent) of the participating study respondents
actually used other mobile-money technology services. Typically, they
had another service for a specified purpose (e.g., business option) or as
a "backup" line while still maintaining M-PESA as the main functional
service.

Women's Groups

M-PESA facilitated women's group payments, especially for members in
urban areas or away from their groups, mostly in the rural areas. Women
highlighted various aspects of this, emphasizing efficiency as essential to
group planning:

> People are able to pay their dues on time even if they are not present.
>   It enables us to plan . . . what we want to do with that money and what-
> ever we wanted to do is done.
>   . . . So, M-PESA has helped us because I am able to send my money on
> time, in good time.

Some of the groups used M-PESA for microfinance transactions, whether
for purchasing or selling a product for their businesses. This involved
facilitating development projects or small-group businesses like crafts,
school, or ginnery, especially in the rural context. There was strong sup-
port and use of M-PESA as a service that promotes more economic transac-
tions in the rural areas, thus leading to rural development and, arguably,
the reduction of poverty. Group members from extremely rural and re-
mote areas confirmed this:

> On the side of purchasing goods, it's like we have been freed from traveling
> by vehicles. We just send the money and the goods are delivered to us . . .
> you have paid for everything including transport.

M-PESA also facilitated and strengthened social support systems and
networking. Women's groups are often expected to attend social events
planned or organized by members of their groups. When attendance is
not feasible, M-PESA can serve as a tool to help demonstrate support:

> [W]e sent [money] through M-PESA and we organized [supported] those who
> were to attend. It was all through the phone . . . the mobile phone.

Moreover, members of these groups used M-PESA to help absent family:

> M-PESA is safe for transacting and efficient means of sending money when faced with emergencies. For example, when someone gets sick, you can source money and get it in time, hence you help save a life.
>
> . . . [W]e now feel that Safaricom has helped us because if I want to talk to my mother this minute, I can talk to her. I send her money, if she doesn't have sugar, she buys sugar. So, it has brought us closer to our parents and our children and the people who are . . . who are far away.
>
> There are changes in our families because I have been sent money by my child who stays in Nairobi [capitol city] . . . he will send it to me through the phone and I go withdraw it so that I can solve the problem.

A group leader shared her experience getting support from other members of her women's group when her husband was hospitalized:

> Like in my case, my husband fell sick and was suddenly referred for urgent surgery. When finally my husband was discharged, it was about 1 PM and I did not have enough money to offset the hospital bill. So I called Hannah [not real name] and by 5:30 PM, I had the full amount of money because of the mobile phone.

From a basic usage standpoint, the women emphasized that M-PESA is convenient, safe, accessible, efficient, and affordable. The fact that M-PESA creates opportunities for employment was also viewed as a positive aspect of the service. From the research, it is clear that mobile-money services are central to the success of these women's groups. As one group member put it, "The use of M-PESA has been extremely beneficial to many people." Many of the group members expressed that they couldn't imagine not having M-PESA as a service now.

However, the use of M-PESA did not just provide opportunities; it also came with challenges for the women's groups. These included fraud, network problems, cost, services for special populations, and group communication dynamics.

Several of the women had lost money to fraud. The most common type of fraud was receiving a call or SMS from an individual who claimed to have sent money to the wrong M-PESA account by mistake. They usually request the money be sent back to them. One woman described a personal experience of how she was almost robbed through M-PESA:

> For example, last week I got three SMS messages continuously; same number, difference of one minute. They were saying to confirm that I had received . . . 5,525 Kshs. . . . so your M-PESA now is 8,000 Kshs. And in my phone I had I think either 2,500 Kshs. So immediately, I knew it was a . . . it was a hoax.

Some of the elderly women emphasized that sometimes their main challenge is their inability to read, meaning they have to give out their personal information, which could be used for fraud. This issue was also expressed by the women's group with sight challenges.

Network issues often arise. The women's groups that VwAG works with are mainly based in rural areas where network reception limits access to service, slowing down transactions. One woman explained the challenge they often face: "'The network is low,' so you are told, 'there is no network.' . . . Today there is no M-PESA. So you find you wanted to send that money quickly, but it can't go because of . . . the network."

The general cost of M-PESA services seemed to be accepted. The issue was mainly highlighted because of the level of poverty, especially in rural areas. Even though the service is greatly appreciated for its convenience and security, the charge is often viewed as an expense that could be available for more pressing issues. One woman put it this way, "If you send money through the M-PESA to the treasurer, you should send with the money [sic] for removing it [transaction fee]."

It was evident that M-PESA services can impact group communication and interaction both positively and negatively. On one hand, it allows for money to be sent to facilitate planning of meetings or other activities. On the other hand, some groups argued, this can also perpetuate the lack of meeting attendance, thus limiting the social aspects and components of the group. This affects the sociopsychological support that comes from group interactions. Some women stated it well:

> Many people feel that they can fail to attend the group meetings and they send the money and it's fine with them [group members].

> Yes, some members would take advantage of that in that they don't have to attend the meeting as long as they send the money [using M-PESA].

> Somebody will be feeling, ah, let me send using M-PESA. Even if you put some penalty of failing to attend [group meeting], a person may send the penalty and fail to attend . . .

So, while some group members weren't concerned by missed meetings, for others it negatively affected the group dynamics. Although there were numerous challenges mentioned, the groups made it clear that, as one respondent put it, "the positives are more than the negatives."

Persons with Visual Impairment (VIs)

Persons with visual impairment (VIs) experienced many of the same benefits as the women's groups, especially the convenience of using mobile-

money services. However, VIs tended to have more pronounced negative experiences when trying to use this technology. In general, the VIs mentioned that having a disability was in and of itself very expensive, especially when compounded by societal ignorance and stigma.

Persons with disability felt that the Kenyan culture of ignorance, stigma, and discrimination was extremely harmful to them and held them back from accessing development opportunities. Our informants told us that many Kenyans consider disabled people to be shameful or useless. Indeed, they are often cast aside and hidden. Several interviewees mentioned being shunned by their communities, peers, and even families because of their disabilities.

> Where I come from, there has been difficulties in people accepting me even sometimes when I am walking and I get lost, if I ask somebody, most of the times they don't talk to me, even when I want to buy something from the shop, it's a problem. When I come to the side of my family, up to now, they have not accepted me.

> Well, it is not very easy to integrate with people who have sight, even where you were born. You find that when the people realize that you have a disability, especially visual disability, you are told not to do so many things . . . so sometimes you tend to withdraw even when you go out from the home to the community it's like a spectacle . . . so to integrate properly is not easy.

> Up to now, they [family] think I am a curse to them because they have never seen a blind person like me in their lineage.

Some interviewees mentioned specific instances of abuse, discrimination, or other ill treatment that were ignored or accepted by the public. This exemplified the lack of accountability many VIs have found in Kenya concerning the treatment of persons with disabilities or challenges. Many interviewees mentioned that people are not trained to work with VIs. The following comments by VIs illustrate specifically how the transport sector often don't accommodate and properly behave toward them:

> The vehicle [public transportation] . . . sometimes I don't find it friendly, user friendly because some people, the touts or conductors . . . they don't have the polite language.

> [T]he passengers should be informed . . . because for instance if you want to get a seat in a bus, you may move and pass a seat and yet the passenger is there, the conductor who should be showing you . . . they are not sensitive . . .

Interviewees were very specific about distinguishing between people in professional settings being unaware of how to work with VIs and the ignorance among the general public.

Throughout Kenya, many people do not understand what a disability is and often do not know how to react to a visually impaired person. This does not always result in discrimination but tends to make situations awkward and create challenges for VIs in working with or getting to know or trust people, as well as in using technology. To use mobile money as a VI is difficult because the mobile-money system requires sight. In order to use mobile-money services, VIs are forced to rely on other people, even strangers or well-meaning individuals, to handle their mobile-money banking. This fosters dependency, perpetuating their vulnerability:

> First, it's so much challenging because when you want to send money you have to be assisted, that is the first thing we experience. Secondly, is the usage. If you want to confirm the amount that you have sent or you have received, you have to use another person. So you find that you are so much dependent on people who have no visual impairment because the mobile that we have is the cheap one in the market. . . . They don't have that soft-ware informing you.

> There might be a challenge if you are a totally impaired person to use M-PESA . . . unless you have a phone that is jaws [audio program] enabled, it might be a problem because this is where you need help from people. . . . Some of the information you are working on when you are doing M-PESA is private.

As a result of these obstacles, several different types of fraud can occur in the process of using mobile-money services. One of the most frequently mentioned issues was that VIs have to share their pin numbers with oth-ers in order to use mobile-money services. The story of Esther (not her real name) illustrates how this is a major security issue, as the pin num-ber allows access to all of the money and other data in a person's M-PESA account. While in her house, Esther's "friend" said he could help her transfer funds. After he got her pin number, he transferred the money, which was meant for her child's education, to his own account. As this story illustrates, because they cannot see, VIs are thus more likely to be ripped off through scams. This makes the need for audible phones more urgent.[6]

Mobile-Money Technology and Link to Poverty

The participants in the study clearly inferred a link between mobile-money services and poverty alleviation. The women's groups tended to see it as helping reduce poverty, while the VIs saw it as potentially increasing pov-erty. One women's group member from a semiarid area said, "[M-PESA] is making things better such that the poverty is not so high." For the most

part, many participants, especially from the women's groups, identified using mobile-money services as a tool for socioeconomic support for the individual, family, and community. Mobile-money services helped users address several issues that affect livelihoods or well-being, such as health, agriculture, microfinance and business, education, food security, and emergencies. Even though the women, especially those from extremely rural areas, faced challenges – such as fraud and network issues – while using mobile-money technology, they were not as pronounced as they were for more vulnerable populations such as VIs. Persons with visual impairment often experienced fraud and network challenges differently.

Without citing numbers or statistics, many interviewees tied disability to poverty. This was particularly the case of the VIs. In terms of health and education, persons with visual impairment tend to generally have higher hospital and medical bills. Schooling for the blind is expensive, as are school materials and the cost of living away from home, as many blind schoolchildren do. Further, to get around, they need special equipment, or they must hire guides. Many interviewees mentioned that it is a challenge for persons with visual impairment to afford living independently to any degree, whether at school or in the context of the family. Of particular relevance for this volume, poverty was sometimes perceived as being perpetuated by the use of mobile-money technology, especially because of the cost and accessibility:

> Sometimes if you want assistance from a person, some do cheat and they might withdraw more or less the money you want. So there is cheating in terms of the person you are asking for assistance.

> We have an economic [barrier]. . . . These phones for visually impaired, maybe the mobile that speaks, is very expensive.

> One is that they are expensive. . . . [T]he economic . . . expensive nature of the mobile services makes it a barrier. You may find that if you want to access . . . the most appropriate services, they are very expensive.

> When it comes to M-PESA, even though you don't want to disclose your information to someone, you have to when using this service. There is no privacy because you have to rely on another person.

Interviewees brought this point up, exemplifying it through stories and their own experience, because they believe that perhaps poverty reduction would help prevent more people from becoming visually impaired. Many VIs struggle with poverty and frequently need assistance. One person with visual impairment said it this way: "Poverty and visual impairment are brothers." Mobile-money technology, they argued, could help in shifting this reality.

Discussion

M-PESA, Safaricom's mobile-money service, provides up to 80 percent of the mobile phone market in Kenya (Buku and Meredith 2013). The benefits of M-PESA, highlighted in the research, paralleled those in the literature. This service caters to a large portion of the population that has no access to banking (Mas and Radcliffe 2010) and clearly builds on the urban-rural linkages in Kenya (Mas and Morawczynski 2009). This parallels the study findings.

Among VwAG and the twenty-one women's groups, for instance, the mobile-money service has become a core component of the group's management, communication system, savings and investment. Many of the group's members now make their monthly or loan payments using a mobile service, predominantly, M-PESA. As we have seen, this has resulted in several things. First, it has provided access to more banking and saving options. Second, it sometimes has limited the social networking or personal interaction that is often foundational to any human transaction as group members have chosen to skip monthly meetings and instead send their payments using mobile-money services. This illustrates the complexity of anthropologist Bill Maurer's point that money has a role in social engagement or interaction (Maurer 2006). Third, access to mobile services has added a level of efficiency within the group, helping to streamline banking procedures and payments of assets or other services. For group members who live overseas or outside of Nairobi, the use of mobile-money systems has proven convenient and efficient.

However, as people with sight take advantage of all that mobile-money services have to offer with limited barriers, the challenge to make this technology accessible and relevant to persons with visual impairment is still very real. In discussions with VIs, they emphasized how they still feel vulnerable because they get their personal information, like pin numbers, stolen or they face discrimination when trying to access transportation to go to mobile-money outlets. "Every day, millions of people around the world who have a disability, are faced with frustrating—even impossible-situations. . . . [T]hese people should enjoy the same services and opportunities in life as everyone else" (Pedlow et al. 2010: 147). As one of the employees of an organization working with VIs argued, "Mobile banking is supposed to work for everyone, so it is paramount to provide access to these resources."

At the policy level, the focus must be on rules that facilitate inclusiveness and effectiveness of mobile-money technology for all citizens. However, merely specifying inclusivity leaves unanswered questions, es-

pecially for those with visual impairment. What does "accessible" mean, what accommodations are reasonable, and who will bear the financial costs and responsibility of implementation (Gill 2002), whether for women's groups or persons with visual impairment? As the research illustrates, the women's groups, whether in rural or urban areas, have less pronounced difficulties in the usage of and accessibility to mobile-money services. For Kenya, the real challenge is ensuring that policies facilitate inclusiveness and access for persons with disabilities or other concerns.

For the visually impaired, the approach to mobile-money technology must be informed by a justice or human rights approach. As previously discussed, VIs face discrimination and injustices that make them more vulnerable when trying to use mobile services. Additionally, mobile-money technology must be interdisciplinary, holistic to include "products, resources, methodologies, strategies, practices and services . . . to promote functionality for visually impaired people with regard to autonomy, independence, quality of life, and social inclusion" (Alves et al. 2009: 148). Finally, as highlighted in the study, mobile technology must be undergirded by training and support services (Resnikoff et al. 2004) to ensure it is effective and inclusive. This was emphasized by VIs so that they can receive better treatment and customer service.

Afterword

According to Kenya's constitution, "A person with any disability is entitled to access . . . appropriate means of communication . . . materials and devices to overcome constraints arising from the person's disability" (Government of Kenya 2010: 63). As this research highlighted, many individuals are also willing to be part of the solution. This is how one person expressed their desire:

> So we have to stand strong although we have the disability. We have to stand and show society that disability actually is not inability. We can do it if we are given the opportunity and not sympathy.

A highlight of the workshop we ran for persons with visual impairment was a testimonial by an M-PESA agent who was himself visually impaired. He expressed this bottom line on why he took on the challenge of becoming an M-PESA agent: "[W]e are only impaired, not disabled." To the policymakers and service providers, he emphasized the need for mobile-money technology that facilitated acceptability, availability, accessibility, and adaptability. Yet, persons with disabilities continue to be

significantly marginalized in terms of both policy and practice (Nkansah and Unwin 2010).

There are many guiding documents that can help inform policy and practice. At the national level, these include the Kenyan constitution, National Plan, and the State of Disabled People's Rights in Kenya – 2007; and at the international level, the UN Convention on the Rights of Persons with Disabilities – 2006. Governments, NGOs, and institutions must focus on ensuring policies that are fair and inclusive, especially for individuals with challenges. As one member of a focus group in rural Kenya put it, "I am blind, so the service providers should formulate policies that are user friendly for persons with disability."

At the workshop for persons with visual impairment, the presence of policymakers and service providers did not go unnoticed. Participants did begin to hear a shift in policy and practice. One of the mobile-money companies committed to developing software to ensure text to speech for VIs. They also mentioned that customer services for VIs would improve through a special customer-care line that would be launched. There was a commitment to developing an interactive voice recording or an "audible" feature so mobile-money technology is more accessible for persons with visual impairment. These are small, but promising, steps.

Acknowledgments

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APPENDIX 1: Research Description and Methodology

In the two-phase research, the aim was to, more comprehensively, study, document and disseminate the impact of mobile-money services on vulnerable populations—specifically women and persons with visual impairment who tend to be marginalized within societies. During the first phase, data were collected among twenty-one women's groups who had been trained by VwAG in the rural part of Eastern Kenya.[7] The second phase illuminated the experiences of persons with visual impairment in Kenya, especially as it intersected with poverty and mobile-money technology. Individuals and institutions impacted by visual impairment were identified using the snowball method.

In both phases of the study, data was collected using diverse methods, mainly qualitative in nature, considering the literacy rates in rural and urban areas. Focus-group discussions were carried out with six to eight members of each of the study populations. A total of thirteen focus groups were carried out: six with the women's groups and seven among individuals with visual impairment.[8] In-depth interviews focused on selected members of the particular population, mainly leaders for women's groups (N=21) and representatives and leaders from institutions or organizations working with persons with visual impairment (N=27).[9] Participatory observations of groups' monthly meetings or other events were done mainly to observe the use of mobile-money services. An extensive literature review mainly included library research and documents from government offices, nongovernmental organizations (NGOs), and service providers.

In terms of documentation, the first part of the study was a process of capturing and profiling the users of the mobile-money services. The process was also designed to assess and document the impact, both positive and negative, of the mobile-money services on the individuals or groups. The second part included data coding and analysis using thematic codes. In the third part of this research, we shared and disseminated the findings, mainly through workshops targeting the research participants, representatives from the study populations, service providers, and policymakers.

The workshop processes aimed to achieve three purposes. First, the goal was to disseminate some of the preliminary thematic findings from the research on mobile-money services. Second, the service providers and policymakers had the opportunity to respond to some of the issues and challenges highlighted in the research. This provided an opportunity to begin addressing the findings. The workshop formats worked effectively for sharing and influencing policy because they engaged the individuals who were impacted by their services. Finally, the third goal was to provide a networking opportunity for participants. For the women's groups, this was a frequent request throughout the VwAG training and research process. The research team observed and followed all ethics and etiquette requirements.

NOTES

1. *Vinya wa Aka* means "The strength of women" in Kikamba, the group's local language or "mother tongue."
2. At the time of research, the regions were called "districts." With the Kenyan government restructuring, these are now referred to as "counties."
3. M-PESA: M=Mobile; Pesa=money in Swahili.
4. MAP (Medical Assistance Program) International is a global health and development organization headquartered in Brunswick, Georgia.
5. Community outreach projects include environmental conservation (tree planting); counseling/mentoring youth in and out of school; community health education; financial support for local institutions and initiatives; and working with people challenged by disabilities.
6. As one participant put it, "On the negative side, eh, sometimes now because of this challenge of being visually impaired, most of the times . . . the phones which are available nowadays, they are not audible, they don't talk."
7. On an average, the women's groups can range from ten to thirty members in a group. A few of the groups have more members.
8. Additionally, focus groups were held with students from the academic institutions, mainly at the college level. However, at the Thika School for the Blind, focus-group discussions included students at the primary and secondary levels.

9. The individuals interviewed included members of the one women's group, Cheerful Sisters; nongovernmental organization leaders who were impacted by visual impairment themselves; principals; and top officials of the academic institutions.

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