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The Paradox of Mobility in the Kenyan ICT Ecosystem: An Ethnographic Case of How the Youth in Kibera Slum Use and Appropriate the Mobile Phone and the Mobile Internet

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The Kenyan ICT ecosystem has attracted vast global media and policy attention because of notable mobile phone adoption in the country. However, empirical research of how Kenyans use and appropriate new media and ICTs in the diverse contexts within the country remains limited. In order to contribute to the emerging literature on Sub-Saharan Africa ICT ecosystems as well as the Mobility discussions within Mobiles for Development M4D and Information and Communication Technologies for Development ICT4D, this paper discusses an empirical case of how the youth of Kibera use and appropriate the mobile phone and the mobile Internet. The purpose of this critical realist ethnographic research article is to explicate the events in the historical development of the Kenyan ICT ecosystem as well as the components of social and physical structure in Kibera slum along with the relationships between them. This paper argues that the mobile phone eases communication and strengthens existent social ties for the youth of Kibera. However, it cannot bypass the hierarchical nature of Kenya where “class and place of residence are distinctive social markers in the process of social networking” [Wallis, C. (2011). Mobile phones without guarantees: The promises of technology and the contingencies of culture. *New Media & Society*, 13(3), 471–485. Wallis, C. (2013). *Technomobility in China: Young migrant women and mobile phones*. New York, NY: New York University Press]. Therefore, the young Kiberans predominantly use and appropriate the mobile phone to network with those in the same lower income strata. This is because they are widely perceived in Kenyan society as the “other and what does not belong” because they are slum residents [Hall, S. (2013). The spectacle of the other. In S. Hall, J. Evans, & S. Nixon (Eds.), *Representation: Cultural representations and signifying practices* (2nd ed., pp. 223–283). Sage. p. 257].

Keywords: ICT ecosystem; mobile phone; mobility; critical realism; Kenya; ethnography; social class; social networking; slum

Introduction: the ICT ecosystem in Kenya

The ICT ecosystem is “the policies, strategies, processes, information, technologies, applications and stakeholders that make up a technology environment for a country, government or an enterprise” (Open ePolicy Group, 2005, p. 3). Fransman defines the “ICT sector as an ecosystem comprised of the networked element providers, the network operators, content and application providers and the final consumer” (Fransman, 2010, p. 8). Both definitions aptly capture that ICT usage within a country or environment is interrelated with the institutions that provide,

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regulate and facilitate the ICT-based services. The Kenyan ICT sector is a good representation of Fransman's conceptualization of the ecosystem. Kenya is one of the most culturally diverse countries in Sub-Saharan Africa with approximately 41 million people drawn from 42 ethnic groups with 70 linguistic variations (Kenya Yearbook, 2012, p. 47). There are also a large number of residents drawn from neighboring countries such as Somalia and Sudan. They account for 15% of the population whilst Indians, Arabs and Europeans account for another one percent of the population (Central Intelligence Agency, 2014).

A historical review of Kenya reveals that legislation passed by the government has been instrumental in promoting the growth of the ICT sector. In 1998, parliament enacted the Kenya Communications Act (KCA) to eradicate the government monopoly in the communications sector. Before the KCA, the government entity Kenya Postal and Telecommunications Corporation (KPTC) operated as the sole service provider and regulator of telecommunications services. Consequently, when parliament passed the Act, it "facilitated the unbundling of the KPTC into five separate entities" (Munyua & Mureithi, 2007). One of the entities created was the CCK (rebranded as the Communications Authority of Kenya, CA). The body is responsible for licensing all systems and services in the communications sector. It is also responsible for facilitating the development of the information and communications sectors that comprise broadcasting, multimedia, telecommunications, electronic commerce, postal and courier services.

The occurrences in the Kenyan ICT sector illustrate Fransman's proposition that the government institution facilitates change in the broader ecosystem by creating a sound regulatory body. He acknowledges that institutions such as regulators, competition authorities and universities are very significant in the new ICT ecosystem (Fransman, 2010, p. 8). The Kenyan case is a classic example of the government institution facilitating change in the broader ecosystem by creating a regulator. This is because the liberalization of the sector led to the establishment of sound regulatory frameworks that drove the expansion of telecommunications networks by attracting private investment (Kimura, Omole, & Williams, 2010, p. 339). Consequently, one of the impacts of the increased investment was a higher supply of mobile phone services so that more Kenyans could afford a mobile phone handset and network services.

Mobile phones in Kenya

The affordability and access to mobile phones were facilitated when leading mobile network operator Safaricom and competitor Airtel (then Kencell) invested greatly in network expansion. Mobile phones were "first introduced in Kenya in 1992 but the cost of handset ownership was too high for many" (Waema & Miroro, 2014, p. 104). The earliest owners of mobile phone handsets were very wealthy businessmen and some government technocrats. Seven years later, in 1999, "less than 1 in 1000 Kenyan adults owned mobile phones. However, by mid-2010, there were 21 million active mobile phone numbers (equivalent to one per adult)" (World Bank, 2010, p. v). According to the CA's (2015, p. 6) last evaluation, the mobile penetration rate was 83.9% (out of approximately 43 million). Kenya's mobile penetration rate is significantly higher than the Sub-Saharan Africa regional average of 38% out of a population of 936.3 million (GSMA, 2014, p. 2). As mobile phone use and adoption continued to rise in Kenya, the innovation of mobile phone money transfer service *M-Pesa* (M is for Mobile and *Pesa* is the Kiswahili word for money) took place.

M-Pesa was launched in Kenya by the mobile network operator Safaricom in March 2007. Within eight months of its launch, over

1.1 million out of 40 million Kenyans had registered to use the service and over US\$87million (approximately KSH8.5 billion) had been transferred over the system. By September 2009, the

number of registered users rose to slightly over 8.5 million and US\$3.7 billion (KSH361.5 billion) had been transferred over the system. (Mbiti & Weil, 2011, p. 1)

The functionalities and economics of *M-Pesa* are vastly explored and well documented in various literature (Aker & Mbiti, 2010; Jack & Suri, 2011; Mbiti & Weil, 2011; Omwansa, 2009). Much of the empirical literature on *M-Pesa* documents the earliest users of the technology service whilst some of the literature cautions against conflating the vast amount of money transferred over the system with actual economic growth. Despite the empirical gaps in the literature, the success of *M-Pesa* is widely touted as one of Kenya's biggest innovation stories. Safaricom has grown tremendously because of the usage of *M-Pesa* and its profit margins have increased steadily. Consequently, it has amplified the perception that the Kenyan ICT sector is a viable and profitable investment. In addition to provision of an environment for the rapid growth and development of *M-Pesa* and other mobile money competitors (such as Airtel money), the liberalization of the Kenyan telecommunications sector has also facilitated the licensing of numerous Internet Service Providers (ISPs).

The Internet infrastructure in Kenya

The ISPs have invested in various infrastructural developments in the ICT sector to facilitate faster and cheaper connectivity (Waema & Miroro, 2014, p. 105). Of particular significance is that between “mid 2009 and mid-2012, terrestrial fiber networks were laid at the Kenyan coast to support faster and cheaper connectivity” (Miroro & Adera, 2014, p. 71). Kenya has more licensed international gateways than any other country in Sub-Saharan Africa. The localization of connections through the Kenya Internet Exchange Point has facilitated Kenya's emerging Internet leadership as it allows local users to interconnect locally without traffic being pointed back to the US or Europe (CIO, 2014). The 2015 CA annual report indicates that there are approximately 29.6 million Internet users and the number of users is growing steadily. A large number of Kenyans also access the Internet through their mobile phones and there are 19.9 million mobile data subscriptions (CA, 2015, p. 7). Notable scholars forecast that the mobile phone is the “technology of choice for developing countries to reduce their Internet connectivity gap” (Castells, Fernandez-Ardevol, Qiu, & Sey, 2007, p. 245).

Mobile ecosystems in Sub-Saharan Africa

As the “mobile phone diffuses across the globe, a chorus of voices heralds its ability to enable individuals in developing countries to increase their life opportunities and living standards” (Wallis, 2011, p. 472). There are a lot of optimistic projections about the growth of the mobile ecosystems in Sub-Saharan Africa (Ericsson, 2014; GSMA, 2014). One reason for this is the fact that the region has the lowest fixed (land) line penetration rates in the world due to poor infrastructure and past cases of corruption (Versi, 2010 in Porter et al., 2010, p. 1). Therefore, for many Sub-Saharan Africans, their first interactive communications device is the mobile phone. The mobile subscriber base has grown by 18% per annum over the last five years and it is one of the fastest growing regions globally. As of 2013, there were 253 million unique mobile subscribers (and 502 million active SIM connections) in the region (GSMA, 2014). Toward the end of 2013, there were almost 150 million individuals using mobile devices to access the Internet in Sub-Saharan Africa. That figure is equivalent to an overall mobile penetration rate of “17% of the total population compared to a global average figure of just over 30%” (GSMA, 2014, p. 3). Therefore, the widespread usage of the mobile phone has led to the belief that the mobile phone can provide previously unavailable opportunities for communication over long distances or be used as a tool for poverty reduction (Hahn & Kibora, 2008, p. 88).

However, despite the vast optimistic “media reports” about the mobile phone in Sub-Saharan Africa, there is very limited empirical research that discusses the users and beneficiaries of technology (Fox, 2011; *The Economist*, 2009). Ecosystems scholar Toivanen describes the users as the “last mile of the information society” but it is more appropriate to describe them as the first because their role is even more pronounced in mobile telephony, mobile banking and social media access (Toivanen, 2011, p. 25). In the ICT4D and M4D studies reviewed in the next section, it emerges that the motivation to have a mobile phone is not the result of a planned development initiative but it is simply individuals adopting technology that helps with their daily affairs (Ling & Horst, 2011, p. 365). The studies reviewed contribute to the literature on mobility which is the mobile phone’s ability to “compress space, distance and time as it eases and facilitates social co-ordination” (McIntosh, 2010, p. 341).

A literature review of mobility studies

In one of the first anthologies of mobile communication in Africa, mobile phones are described as the *new talking drums of everyday Africa* (de Bruijn & Nyamnjoh, 2009). The text contains disparate accounts of the relationship between society and technology in Sub-Saharan Africa. The same team published a second book with more accounts of how the mobile phone and the societies that have embraced it are mutually shaping each other (de Bruijn & Nyamnjoh, 2013, p. 4). One interesting study contained in the anthology is Lamoureaux’s (2013) study of Sudanese students. The study reveals that the mobile phone provides a site for new spaces of interaction and some marginalized Nuba student migrants living in the urban capital of Khartoum use the mobile phone to create a place of belonging (Lamoureaux, 2013, p. 178). A qualitative study of young people in Ghana, Malawi and South Africa established that the youth view the mobile phone as an object of desire and a symbol of success. Additionally, the “virtual mobility of the mobile phone also promotes young people’s inclusion in existing social networks. However, it is also a likely indicator of sexual liaisons with sugar daddies and the increase of inter-generational tensions” (Porter et al., 2012, pp. 156–159). A study of the youth in Dakar reveals

the mobile phone offers young people remarkable opportunities to leapfrog physical mobility constraints as the sending of text messages on mobile phones opens up new corridors of communication between youth, transgressing gender barriers meticulously guarded by parents and other gerontocratic custodians. (Christiansen, Utas, & Vigh, 2006, p. 20 in Porter et al., 2012, p. 146)

The studies reviewed reveal that the mobile phone is a technology with both positive and negative sociocultural outcomes. Therefore, the mobile phone is not just a physical artifact; it is also a sociocultural artifact. Additionally, there are similarities as to how users in the Global South use the mobile phone with the well-researched users in the Global North. For example, the theme of youth using the mobile phone for escape of surveillance and transgressing physical boundaries is well documented in the Global North context (Ito & Okabe, 2005; Kingston, 2004). In addition to the disparate studies, there are some notable studies that reflect the near seamless embedding of ICTs and mobile phones in the context of use. One example is a study of Senegalese boat migrants in Spain. The study probed how the migrants used ICT to stay in touch with their home country. Nyamnjoh (2014) discovers that the phone is the “umbilical cord” that joins mothers and family with their migrant family members (Palen, Salzman, & Youngs, 2001 in Geser, 2004, p. 12). The phone allows the migrants to “embrace their Senegalese identity effectively and reinforce it by protecting the socio-cultural values of their home society” (Nyamnjoh, 2014, p. 160). In Burkina Faso, Hahn and Kibora (2008) discover the domestication and almost seamless embedding of the mobile phone in oral Burkina Faso. They argue that the gadget has been socially integrated into the society in both urban and rural areas (Hahn & Kibora, 2008, p. 96).

Domestication of technologies and appropriation

Hahn and Kibora (2008) employ an approach that is important in the context of this paper: Domestication of technologies (appropriation) approach. In the larger study that this paper is drawn from, the approach is used to make sense of the corpus of data collected. The domestication approach is also referred to as appropriation and it “encompasses the local practices of use which develop around a new object (or medium) anchoring it within particular temporal, spatial and social relations” (Livingstone, 2002, p. 35). It is often used in ICT research within media and cultural studies, to “to analyze the complex process by which ICTs enter and find a place within household routines and practices” (Silverstone, 1994, p. 20). The term domestic is not confined to home and is applicable to other areas of everyday life (Hynes & Rommes, 2006, p. 26). Domestication offers a lens to examine the process of how people purchase and embed artifacts or technologies into their daily lives. The approach is very similar to Bar, Pisani, and Weber’s (2007) technology appropriation.

Within the Information Systems (IS) literature, Bar et al.’s (2007) version of technology appropriation is more prominent than the domestication approach. Based on extensive empirical work in Latin America, the scholars define appropriation as the process through which mobile users go beyond mere adoption to make the technology their own and to embed it within social, economic and political practices. The scholars argue that

the appropriation process is fundamentally political: it is a battle for power over the configuration of a technological system Users re-invent the technology while they try out its features, tweak devices and applications so they better answer their needs and develop new social, economic and political practices around the possibilities open by new technological systems. (Bar et al., 2007, p. 2)

Their version was conceptualized to inform an in-depth study of the social, economic and political impact of mobile phones in Latin America. One notable similarity in both versions of appropriation is the acknowledgment that technology use is a process. They also emphasize that users exercise their will and agency to use technologies as they are active consumers and not just passive recipients.

Bar et al. (2007, p. 24) amplify the agency of users as transformative shapers of technology that can actually reconfigure or subvert the producer or manufacturers design. In contrast, the domestication of technologies approach does not explicitly suggest that users are capable of reconfiguring technology. However, the approach does not omit such a possibility. In domestication, the fourth step is that an artifact or technology is “incorporated and ascribed meaning within household rituals and rules” or the daily lives of people (Ward, 2005, p. 151). In the discussion section of this paper, appropriation is revisited in order to examine the incorporation of the mobile phone in the context of Kibera. In all the studies reviewed in the previous section as well as this one, the mobile phone emerges as a sociocultural artifact with both positive and negative implications in diverse contexts. It is evident that technology use and appropriation is a process that will vary from context to context. Therefore, it is important to critically engage with the layers of society that technology permeates and the relationships it has potential to configure. Social markers of difference such as social class, income, area of residence and race emerge as significant in the process of evaluating technology access and use within the ICT ecosystem. However, the markers of difference are not explicitly identified or interrogated in the Sub-Saharan Africa literature.

Social markers of difference in the ICT ecosystem

In the limited African literature, Archambault (2012, pp. 393–394) argues that the use of ICTs such as the mobile phone bridges distances for the low-income youth of Mozambique by

opening up a space for global imagined identities. However, the same mobile phone also “betrays the difficulty of the social mobility the youth anticipate in highly unequal Southern Mozambique where ease of communication and networking do not always facilitate social mobility.” In the broader Global North literature, social class as a marker of difference is identified as relevant in the process of mobile phone connections and interactions. In a study of China, Wallis discovers that mobile phones enable migrant women to expand their social networks by increasing their strong and weak ties but

they do not help them to build connections with those in higher social classes than themselves due to the customary manner in which *guanxi* (social) networks are built and the rigid class and place based distinctions that characterize contemporary Chinese society. (Wallis, 2011, p. 478)

Therefore, social markers of difference such as class, gender, age and rural origin are not overcome by the use and ownership of a mobile phone. In resonance with Wallis (2011), Qiu (2009) argues that usage of ICTs does not always lead to cultural or political empowerment in a highly stratified China because of factors such as gender, education, age, ethnicity and places of origin (Qiu, 2009, pp. 239–243).

In the Indian context, Tacchi, Kitner, and Crawford (2012) explored the relationship between development, gender and technology through a focus on mobile phones and their everyday use by women in rural India. They discovered that mobile phones are potentially transformative but “gender and caste combine to produce formidable constraints” (Tacchi et al., 2012, p. 535). In the US context, boyd (2013) researched teens’ meaningful engagement with social media sites MySpace and Facebook. Race emerges as a social marker of difference within the users in the ICT ecosystem. This was manifest when she discovered that white middle-class teens were migrating from social network MySpace to Facebook because they associated the former with being more *ghetto*. The white students from affluent backgrounds preferred to use Facebook rather than MySpace so the teens chose to self-segregate themselves in the two digital sites the same way they do in their physical social environment of school. Therefore, the digital social media sites emerged as an extension of the socially reproduced segregated spaces that they live and school in (boyd, 2013, p. 204). It is evident in the diverse contexts discussed that, ICTs such as the mobile phone and social networking sites facilitate social connections and ease the coordination of activities and relationships amongst users. However, they can also serve to reify one’s position and social class in society even further (Wallis, 2013, p. 182). The social spaces created by ICT use can be treated as continuities of the offline (Miller & Slater, 2000, p. 5; Wallis, 2011).

In the Kenyan context, discussions of social or cultural markers of differences such as ethnicity, class or income in the interaction between technology and users within the ecosystem are absent. The optimism generated by the avid usage and success of innovations such as *M-Pesa* has overshadowed discussions on the critical relationship between technology and the very diverse and stratified multicultural society. Additionally, empirical analyses of the social or cultural context of technology use in Kenya are rare. One study that attempts to interrogate the relationship between culture and technology is an ethnographic study of the mobile phone use by the *Giriama* in the coastal town of *Malindi*. McIntosh (2010) explores the use of the local dialect *Kigiriama* in text messaging. She discovers that the phone has been very useful in facilitating social coordination due to the prevalence of phones amongst those 40 and younger. However, she also discovers that mobile phones are viewed with suspicion by the elders due to their foreign origin. They are also perceived as fostering some of the “sexual promiscuity that contributes to social disintegration” (McIntosh, 2010, pp. 341, 348). Therefore, the mobile phone has a dual effect in the society. It fosters social cohesion but it also arouses anxiety because it is a technology that is associated with the former British colonialists and threatening Western values.

The bulk of the empirical literature on Kenyan ICT employs the survey research method as the main form of data collection. Most of the studies are dated as they were conducted over five years ago. One comprehensive study of the Kenyan ICT sector is the Research ICT Africa (2007–2008) quantitative and qualitative study of 400 low-income households in rural and urban Kenya. The study established that the level of education and formal employment of household members positively influenced ICT access and use. The researchers discovered that ICTs contribute to poverty reduction broadly defined as increase in income, participation in governance, enhanced voice, increased access to public goods and services, reduced vulnerability or increase in risk preparedness and increased capacity to cope with, or prepare for and adapt to, natural or economic shocks. They conclude that the use of ICTs as a tool for poverty reduction was limited by high cost of initial purchase and maintenance of ICT equipment (Waema & Miroro, 2014, pp. 113, 126). In another mixed-method study, results from pooled survey data from Nairobi professionals and entrepreneurs in 2002 and 2007 as well as qualitative interviews from 2007 to 2009 show virtual saturation in the diffusion of phones during this period but no direct effect of technology use. They also discovered a network effect of mobile telephony: Increased technological access to existing networks in a context of resource scarcity leads to a strengthening of weak ties and the enhancement of core networks amongst Kenyans (Shrum et al., 2011, p. 614). The other notable studies available are studies about the use of social networking site, Facebook, which is one of most popular sites in Kenya.

Facebook in Kenya

Facebook has approximately 3,800,000 users in Kenya (Digital Rand, 2014). It is very popular amongst the youth who are 18–34 (Njonjo, 2010, p. 162). Empirical studies of the usage of Facebook in Kenya are focused on cyber café Internet access. A study of select cyber cafés in rural Kenya established that Facebook offers people additional ways to sustain relationships by sharing photos (Wyche, Schoenebeck, & Forte, 2013). In another study of the usage of the networking site amongst 28 young adults from *Viwandani* informal settlement, the researchers discovered that participants connected with old friends, sought employment and remittances from friends and family abroad. Like numerous studies of Facebook use in the Global North, the site is used for connection and maintenance of existing offline relationships (boyd & Ellison, 2007; Ellison, Steinfield, & Lampe, 2007). However, just like the Research ICT survey discussed, the cost of using the Internet as well as limited access to ICT equipment such as computers was identified as a hindrance to widespread usage (Wyche, Forte, & Schoenebeck, 2013, p. 2824). There is a definite gap within the Kenyan and broader Sub-Saharan Africa literatures for more studies that capture the variations of technology use in the diverse contexts. It is necessary to complement the broad quantitative corporate and academic surveys with qualitative interrogation of how social dynamics such as class, income and educational status influence the ICT ecosystem in diverse contexts. Additionally, the voices of technology users within the ecosystem are very limited. Therefore, in order to make a meaningful contribution to the literature, I selected the qualitative research approach of ethnography in order to allow the limited voices of users to contribute to the important discussion on technology appropriation in the Global South.

Research methods

The ethnographic research methods employed to collect data in the villages of Kibera from January to December 2013 were semi-structured interviews, go-alongs and participant observation. In this paper, I focus on data generated from the semi-structured interviews as well as documentary evidence collected in the form of e-mails. Using a non-probability snowball

sampling method, I interviewed 12 young men and 10 young women. The description of youth in Kenya is between the ages of 18 and 34.¹ I interviewed youth aged 18–29 and I used an audio voice recorder to record the interviews. During and after the fieldwork phase, I transcribed the interviews into 22 extensive notes on Evernote Application. I broke down the notes into manageable sections and sorted the data in order to “bring similar categories together into broader themes” (Noble & Smith, 2014, p. 2). My objective was to “identify the most complete and logically compelling explanation of the observed events given the specific conditions of the contextual environment” (Wynn & Williams, 2012, p. 799).

I used data from the interviews to illuminate my participant observation field notes and eventually triangulated the different data sources to build a justification for the themes (Creswell, 2009, p. 191). In order to validate the data I collected, I applied methodological triangulation by combining the data from the participant observation (especially the go-alongs) with the data from the semi-structured interviews. Ethnographers commonly triangulate or compare and contrast interview and observation methods to “enhance the quality of their work” (Reeves, Kuper, & Hodges, 2008, p. 513). The contextualization and eventual critique of the world in which the young Kiberans inhabit were not a neat and linear process. In order to fulfill the task, it was necessary for me to undertake an extensive self-audit or reflection. I had to acknowledge the assumptions I had about the research context and “bracket” them from the study (Asselin, 2003, p. 100).

Critical realism

This paper is grounded in the critical realist philosophical perspective. The critical realist perspective is based on the foundational work of Roy Bhaskar on critical realism in the philosophy of science (Bhaskar, 1978, 1979). The philosophy acknowledges partial agreement with positivists

that the world contains material conditions upon which certain broad consensus beliefs can be attained, but at the same time, due account must be given to variations in the meanings individuals from different communities may attach to the same social phenomena. (Gunter, 1999, pp. 7–8)

There are no fixed methods to apply critical realism to research. Ethnographic techniques can be used “within the model of critical realism to investigate the nature of generative structures through examination of social phenomena” (Porter, 1993, p. 594). Wynn and Williams (2012) propose five methodological principles to guide a critical realist research. In this particular paper, I focus on two principles. One is the explication of events that entails identifying and abstracting the events being studied, “usually from experiences, as a foundation for understanding what really happened in the underlying phenomena. Secondly, is the explication of structure and context that entails identifying components of social and physical structure along with the relationships between them” (Wynn & Williams, 2012, p. 796).

In alignment with the two principles, I present the physical and social structure of Kibera. This is followed by a discussion of the theme of the paradox of mobility that emerged from the mobile phone use and appropriation of the youthful Kiberans. In the larger research project that this is paper is drawn from, I selected Kibera as a research context because the objective was to assess the optimism surrounding ICT4D and M4D in the Sub-Saharan African context. I purposefully selected a research site that would elicit a great understanding of the research problem. This paper addresses the RQ3 that directed the study.

RQ3. How and why do the youth of Kibera appropriate new media and ICT technologies?

¹See the full demographic profile attached on the [appendix](#).

The explication of the research context

Kibera is only five kilometers away from the capital city of Kenya. The Nairobi slum is infamously labeled as Africa's largest slum. It originated over 100 years ago during the colonial era as a "remote military exercise ground for the British army King's African Rifles that comprised an Islamised mix of Sudanese, Ugandan and Congolese people known as the Nubi" (Parsons, 1997, p. 88). The area is wrongly identified as Kibera instead of the appropriate Kibra due to the diverse diction of the numerous ethnic groups of Kenya. The original and accurate label of Kibra is derived from the Sudanese Arabic word for bushy place or "land of forest" (Constantine, 2014). In 1963, the expansion of Kibera was incentivized by Kenya's independence from the British colonial government when Africans were allowed to migrate to urban areas (Macharia, 1992, p. 225). This led to an influx of people from various ethnic communities drawn from Kenya's 42 tribes (de Smedt, 2009, p. 203). Consequently, the slum's growth is "commonly linked to the failed efforts of the British colonial administration to re-organize it and the colonial government's policy of malicious neglect which entailed withholding municipal services and development as Kibera's population grew and diversified" (Ekdale, 2011). This policy was continued by the independent Kenyan government which also failed to provide low-income housing through private enterprise (Kung'uru & Mwiraria, 1991 in Ekdale, 2011, p. 11).

Much of the literature on Kibera is focused on the numerous socioeconomic ills that plague its residents and high-profile visits by celebrities and philanthropists. When the President of the United States Barack Obama was the Senator of Illinois, he visited the slum alongside his wife Michelle Obama in August 2006. The Associated Press described the event as a visit to one of the "world's worst slums where about a third of the capital city's total population, at least 700,000 people, are crammed into a single square mile in the slum of Kibera, with little access to running water and other basic services" (Associated Press, 2006). The high population figures cited in the article and other similar ones have been the source of much debate in Kenya because they contradict the last national census results of 2009. In contrast to the media reports, the government of Kenya census findings indicate that the population of Kibera is 170,070 people set on 2.5 square kilometres (KNBS, 2009). The higher population figures are speculated to be deliberate so as to attract "more aid and profit for some groups" (Rothmyer, 2011). In addition to bloated population figures, much of the literature clusters Kibera as a homogenous area. Kibera is described as a "shanty town of rusting roofs slung across mud, rocks and a rubbish dump" (Ray, 2015).

In reality, Kibera exists as a stratified society distinguished by socioeconomic and infrastructural differences (Desgropes & Taupin, 2011). Due to the differences evident in the villages, the youth refer to the 13 villages in the informal part of Kibera as ghetto whilst the three in the formal part are described as Kibera as lower Karen suburb. The villages in the ghetto are: *Kianda*, *Raila*, *Makina*, *Kichinjio*, *Gatwekera*, *Kisumu Ndogo*, *Kambi Muru*, *Mashimoni*, *Laini Saba*, *Lindi*, *Silanga*, *Soweto East* and some parts of *Soweto West*. Kibera as Lower Karen suburb denotes Olympic, *Ayany* and *Salama* (or *Karanja Road*) villages that are in the "formal" area. The 22 youth I interviewed were drawn from *Kianda*, *Makina*, *Gatwekera*, *Salama (Karanja road)*, Olympic and *Ayany*. It is beyond the scope of this brief paper to illustrate all the villages. In order to provide a comparative description between Kibera as Ghetto and Kibera as Lower Karen, I describe contrasting villages in the next section.

Kibera as Ghetto

I conducted several interviews in *Makina* Village. The amplified space is characterized by a palpable entrepreneurship spirit. It is almost as energetic as Oxford Street, London. Neatly

painted shops stocked with diverse wares are packed with customers and smiling salespeople. Restaurants, bars, churches, mosques and schools are scattered in different parts of the village. Even in the midst of crowded rooms and houses, there is a vibrant allure as fashionable young men and women line the streets socializing. Unlike the other ghetto villages, there is very little pollution toward the heart of the village. The shop owners in the village are drawn from diverse communities but the Nubian community owns a lot of the property in the area. Monthly rent can be as high as KSH 20,000 (\$200) for a three bedroomed house. *Makina* is documented to have a population density of 25,242 (KNBS, 2009) and a large number of grocery and hardware shoppers frequent the area from surrounding Adams Arcade and Kabarnet Gardens suburbs. The youth from other parts of Kibera such as *Kianda* were adamant that it was a very unsafe place due to the targeting of profitable businesses by the ethnic gangs. Like other parts of Kenya, most gang membership in Kibera is based on ethnicity: For example, *Mungiki* for the *Kikuyu* and *Kamukunji* for the *Luo*. The gangs in Kibera control and levy taxes over certain public goods and amenities (water, sanitation, electricity) and they may provide “protection to co-ethnic individuals in cases of inter-ethnic disputes” (Marx, Stoker, & Suri, 2014, p. 8).

Kibera is not a “lawless area” devoid of order and structure (Dickinson, 2002, p. 139). It is administered by formal and informal structures of authority that greatly influence the distribution of land, settlement of disputes and handling of security issues (Bodewes, 2005; Marx et al., 2014). The formal structure comprises the elected member of parliament, members of the county assembly representatives as well as the government’s provincial administration of 4 chiefs and 11 assistant chiefs whilst the informal structure includes a council of elders and the ethnic gangs (Marx et al., 2014, p. 3). The most important sources of influence in the governance of Kibera are the chiefs. Throughout the history of the slum, “chiefs have illegally allocated land to prospective structure owners in exchange for payment. This behaviour exceeds the formal, legal duties of the office of the chief” (Joireman & Vanderpoel, 2010, p. 10). Kibera has a “complex structure of economic stakeholders, who have acquired a degree of social legitimacy to extract profit out of trade of inadequate basic necessities” (Huchzermeyer, 2008, p. 20). Water, electricity, refuse collection and toilet facilities are all available at a fee and residents have the choice to pay “illegal private service providers” or government entities (Odbert & Twigg, 2011). The country’s electricity distributor Kenya Power retails legal electricity at a fee and the cost of a legal power connection is about KSH 300 (\$3) a month for the average house of 12 by 12 feet. The government’s Nairobi Water Company provides water for around KSH 200 (\$2) a month or slightly less. Illegal service providers or gangs sometimes tap the genuine electricity and water connections for retail at lower costs to some residents; it is a very dangerous trade that causes accidental fires and tragic deaths in many homes (Mutahi, 2011; Ombati, 2013). In contrast to Kibera as Ghetto, Kibera as lower Karen denotes Olympic, *Ayany* and *Salama* (*Karanja* road) villages in the formal section of Kibera.

Kibera as lower Karen suburb

It is well documented in the literature that many slum residents usually refer to their neighborhoods by place names or nicknames rather than use pejorative terms like slum or favela (Dürr, 2012, p. 798). The real Karen suburb is one of the oldest and most desirable residential areas in Nairobi named after plantation owner and Danish writer of *Out of Africa*, Karen Blixen. It is approximately 15 kilometers away from Kibera so it is borrowed as a nickname due to proximity. The suburb offers a blend of colonial bungalows and villas on gorgeous and expansive grounds (Hass Consult, 2014). It is characterized by modern gated housing communities, restaurants, animal parks, art galleries and cultural centers. The first village in lower Karen is Olympic village. Most of the buildings are made of concrete with brick tiled roofs whilst some have

corrugated galvanized iron sheet roofing. The area has very well-constructed cybercafés, pubs and restaurants. A variety of vehicles are parked in the area as testament to the well-tarmacked roads. The monthly rent ranges from KSH 7000 (\$70) for a one bedroomed house to KSH 30,000 (\$300) for a three bedroomed house. Some residents are homeowners and a typical house costs approximately KSH 6 million (\$60,000). Unlike the informal ghetto part of Kibera, title deeds for the houses are legally available and it is believed that the Nubian community owns most of the houses in the area.

The price range for housing in the rest of Olympic is almost similar but there are a few smaller mud houses that cost much less. Villages in Lower Karen suburb are interesting because they are typically not slum areas but they are strongly associated with Kibera due to proximity, shared infrastructure and media coverage. Sometimes the youth drawn from the suburban area prefer to describe the area as Kibera slum and most maps will cluster the formal and informal areas together. Kibera is not a simple society to define as it is very diverse. There is hardly any literature of the socioeconomic profiles of the residents of Kibera. There are a few papers that offer sufficient evidence of the diverse nature of the residents but they are not exhaustive (Gulyani & Talkudar, 2010; Research International, 2009). In the course of fieldwork, I documented the education levels, age, interests and job levels of all the participants. That exercise was particularly useful in affirming the diverse nature of Kibera (see the [appendix](#)).

Socioeconomic profiles of Kiberans

In 2009, a survey of Kibera established that the average annual income per household was KSH 8500 (\$85.00) and an estimate of KSH 1420 (\$14.20) per month as the income per capita. The income was largely derived from wage employment and small business engagement or what are commonly referred to as micro-enterprises (Research International, 2009, p. 26). Another study of 1755 households in Nairobi's slums discovered that 73% of households are poor and 2% are non-poor (Gulyani & Talkudar, 2010, p. 1712). In comparison with the poverty line of KSH 3174 (\$31.74) per adult per month (excluding rent), both studies conclude that household (*also micro) enterprises are helping Nairobi's slum residents in their fight against poverty (Gulyani & Talkudar, 2010; Research International, 2009). Kihato asserts that Kiberans have a "reverence for education and they will sacrifice almost anything to send their children to good private schools, pay for extra tuition and buy books" (2013, p. 29). In a case study of private schools in Kibera, Dixon and Tooley (2012, p. 702) discovered that parents prefer to enroll their children in low-cost private schools as opposed to free government schools due to perceptions of higher quality in the former. Research International's report indicates that "three-quarters of slum dwellers in Nairobi have completed primary school with no significant difference between males and females. It also highlights that one of the major pulls to reside in Kibera is the lower rent" (Research International, 2009, p. 20). So how exactly do the youth use and appropriate new media given their context?

Discussion of research findings

In this section, the research question of how and why Kiberan youth appropriate new media and ICTs is discussed. The most significant form of new media and ICT that the discussion is centered on is the mobile phone and the mobile Internet. This is because the data collection and analysis of the semi-structured interviews revealed that this was the most significant form of new media and ICT to the young Kiberans. The study discovered that the mobile phone and the mobile Internet facilitate contextual mobility. In that form of mobility, "ICTs afford one

diversified modalities of interaction and help people to interact easily without contextual constraints” (Kakihara & Sørensen, 2001, pp. 35–36). However, in the process of that effective interaction, the mobile Internet also reveals to the young people of Kibera that they are the “others, the outsiders” (Hall, 2013, p. 257).

Access to mobile phones and mobile Internet

According to the findings from the semi-structured interviews conducted, the most important form of new media and ICT in the lives of the youth is the mobile phone because they can use the Internet on the artifact. All the youth in the sample were mobile phone owners. Eleven young men out of the 12 that I interviewed were smart phone owners. Huawei, Nokia and Samsung were popular choices. Three of the men also had an extra basic phone with no Internet capabilities (a cheap phone popularly known as *kabambe* in Kenya). In contrast, 5 of the 10 women owned smart phones. During times of financial challenges, the youth reported that it was common practice to sell their smart phones or exchange them with *kabambes*. Like the Research ICT Africa study reviewed, “they noted that the high cost of initial purchase, use and maintenance of ICT equipment was a challenge” (Waema & Miroro, 2014, p. 125). However, the flexible data bundles offered by mobile operator *Safaricom* from 2011 were cited to be an incentive for the purchase of a web-enabled phone. The youth frequently mentioned that the purchase of KSH 20 (\$0.224) mobile phone top up could enable them to access and surf the Internet very fast. In addition to the data on mobile phone usage and appropriation from the semi-structured interviews, I was also able to acquire complementary documentary data. The purpose of the documentary data is to provide baseline empirical evidence of the mobile phones and Internet-enabled devices used in Kibera.

After one year of negotiation with Safaricom staff members, I received documentary data in the form of two e-mails. In the first e-mail communication I received on 7 March 2014, the Safaricom representative indicated that there are **1,097,315** data-enabled devices in Kibera and another low-income settlement in Nairobi, *Kangemi*. The representative also indicated that the number of mobile phone service subscribers in Kibera and Kangemi is **3,484,330**. The data provided to me clustered the two areas together. Additionally, the data do not distinguish between the use of a mobile phone for Internet access or a mobile dongle device for the same access. However, the representative speculated that most of the Internet-enabled devices reflected in the data were mobile phones. The youth reported that they were avid users of the mobile phone to access the Internet and none of the youth were owners of a Safaricom Internet dongle. They perceived the dongles to be expensive. After I received the first set of data, I requested for another break down of some of the sub-locations or villages of Kibera. The representative was able to furnish me with that data in a separate e-mail on 10 March 2014. The Safaricom representative was only able to provide the data from *Gatwekera*, *Silanga*, *Olympic*, *Lindi* and *Makina* villages. One of the distinctive elements of the data in the e-mail document is that one of the most low-income villages of *Gatwekera* has a higher number of data-enabled devices than the higher income *Makina* village.

Gatwekera has 2331 web-enabled devices whilst *Makina* has 2242 devices. Higher income Olympic has the highest number of web-enabled devices at 4735. The *Safaricom* representative was also able to get some data from the surrounding suburban areas. Some Kiberans are mobile subscribers to other networks such as Airtel and Orange but it was not possible for me to acquire the data from all the mobile service providers. In the context of this study, all the youth were Safaricom subscribers and they cited the popularity of the network. However, they also indicated that other networks were also popular.

Educational status and new media and ICT access

In the course of fieldwork, I also discovered that the most highly educated youth in Kibera had access to a variety of new media and ICT technologies at their work places and in Kibera. The highly educated youth were actively engaged in self-help youth groups such as drug awareness projects in their communities and could access the Internet free from their premises within Kibera. As indicated in the demographic profile (the [appendix](#)), most of the youth were enrolled at various reputable colleges and universities within Kenya. Others were in transition from high school to university and college. In the explication of the context, Kiberans are described as people who revere education. In the broader Kenyan society, the pursuit and desire for formal education are very high. This is because it is perceived as a status symbol and key to employment and opportunities. Educational attainment is generally perceived as “one of the means through which youth in the slum can escape the harsh realities of the slum” and acquire a better life through occupational attainment and residential mobility (Kabiru, Mojola, Beguy, & Okigbo, 2013, p. 82). Educational status as a factor in Kiberan ICT use and appropriation resonates with the Research ICT Africa (2007–2008) study reviewed in the literature review. The study established that the level of education and formal employment of household members positively influenced ICT access and use (Waema & Miroro, 2014). In contrast to the highly educated youth I interviewed, the least-educated youth were very preoccupied in seeking employment opportunities and social connections or what they described as *hustling*. Unlike the highly educated, they were not very actively involved in community self-help groups. One of the least-educated young women, Norah was the only one who had never used the Internet.

The paradox of mobility

The findings discussed in this section relay evidence that the mobile phone eases communication and facilitates the use of mobile Internet access for networking with existent social ties. This resonates with the reviewed study of middle-class Kenyans that established that the mobile phone strengthens existent weak ties (Shrum et al., 2011). Weak ties are an “individual’s loosely connected acquaintances who are less likely to know each other than strong ties who exist in a stronger and more connected friendship circle. They are also likely to form a low density network” (Granovetter, 1983, p. 201). Extensive empirical literature proposes that Facebook is used for connection and maintenance of existing offline social ties (boyd & Ellison, 2007, p. 221; Ellison et al., 2007). Similarly, I discovered that youth were actively using and appropriating the mobile phone to maintain their offline weak social ties through Facebook. Additionally, they were predominantly appropriating Facebook through their mobile phones to network with those in their social class and context. Therefore, the social spaces that were created by the mobile phone were simply continuities of the offline (Miller & Slater, 2000, p. 5). The youth have appropriated the mobile phone and objectified it because it facilitates the convergence of social networking sites such as Facebook as well as e-mail facilities and call functions on the mobile phone. It is also a sociocultural artifact that has become what the youth describe as an *important zone of self-expression*. Furthermore, the incorporation of the mobile phone in Kiberan society is embodied in the fourth step of the domestication of technologies approach because it has been “incorporated and ascribed meaning” within the context of the youths’ lives (Ward, 2005, p. 151).

The mobile phone as a zone of self-expression

The youth spoke fondly of Facebook and some like Pat ² who was just about to join a university in USA through a scholarship reported, “I can be myself on Facebook.”

John who was a full-time student in a highly reputed local university asserted, “Facebook has made life easier.” Liza who was university educated and lived in higher income *Ayany* used Facebook for socioeconomic purposes. She praised the site as it allowed her to “market herself” by posting and promoting her video productions. She discussed her network of friends with passion and reported that rivals used Facebook to spy on her network of friends. “My business competitor likes what I like on the site to try to get my network of friends,” she said. After the interviews, we would sit and chat as we enjoyed some fried flat bread (*chapati*) and it was in those moments the youth would revisit some of the interview discussions. It was evident the mobile phone had “collapsed distance and time” whilst affording them ease of communication (McIntosh, 2010). However, the youth also indicated that their *zone of self-expression* and *office* could not bypass the “hierarchical nature” of Kenyan society of who you know and where you come from matter very much (Hofstede, 2015).

The hierarchical nature of Kenyan society

It is not well documented in the literature but Kenya is a very “hierarchical society” where titles such as *mheshimiwa* (your honor), professor, engineer, doctor and graduate are perceived very highly (Hofstede, 2015). Additionally, the place of residence, ethnic affiliations and educational status are used as social markers that potentially lead to inclusion or exclusion in many Kenyan social networks. In this discussion, I focus on the place of origin and residence as a distinctive social marker that leads to exclusion within Kenyan social networks. During the semi-structured interview of Norah, I discovered that the single mother was intimidated by Internet access and the social spaces created by the use and appropriation of ICTs. One reason she was ambivalent to socialize online and offline is that she preferred to converse in local language Kiswahili rather than English. She had attended primary school but was not proficient in English; she perceived that English was more commonly used online than Kiswahili. In contrast, the more educated youth proficient in English as well as Kiswahili lauded the new social spaces that mobile phones facilitate on social networking sites such as Facebook. However, they reported that they used and appropriated the sites whilst in fear of their perceived lower status in society. For example, Liza reported that her close friends did not want to be identified as residents of Kibera on Facebook. She reported that Kiberans would hide their residential areas online and use code language to discuss Kibera. This is a habit she disclosed that took place in offline day-to-day Kiberan life. The youth were ambivalent to be identified as residents of Kibera because they perceived it was a low-income slum with a negative image. Most of the youth had experienced social exclusion in higher middle-to upper-class social networks within Kenyan society. Susan recounted an experience that confirms the practice of inclusion or exclusion based on places of origin.

I have been stigmatized when I was in school. I used to attend Loreto Msongari located in a high class suburb, so from I and 2 I used to lie to people. I told them I lived in Kilimani (an upper middle class suburb) and they considered me to be cool. One day I decided to stop lying and I told them the truth and I became the not so cool friend. Hata sikuwa na mabeshte! (I never had friends!)

²The names are all pseudonyms because of ethical guidelines on privacy.

Tracy lost her job as a part-time waitress for revealing that she was from Kibera as the owner of the restaurant in the city center in Nairobi was wary that she would be a security threat. Susan and Brian also noted that in some forums they attended, some people would clutch their handbags tighter when they mentioned they were from Kibera.

Diane observed, “women really fear saying they are from Kibera but I don’t care! When we go clubbing and they have to be dropped by the guys they ask them to drop them at the mall because it’s posh.”

In addition to ambivalence about Facebook use and appropriation, some of the youth perceived the social networking site Twitter useful but intimidating. For example, Brian indicated that the site is much more intimidating than Facebook and is more suited to middle- to upper-class-educated Kenyans.

Mi hupenda Facebook sana, kuchat na mabeshte..mi huona that Twitter ni ya watu wasomi . . . mi huona hivyo (I like Facebook very much, to chat with my friends but I see like Twitter is for the learned, the rich, that’s what I feel).

Moha also noted, “Hiyo Twitter ni ya watu serious si ya ujinga mob kama Facebook (Twitter is for serious and established people, not for stupidity or for common people like Facebook).”

Paul reported, “Twitter si ya ujinga, mi huitumia kufuata watu wa maana (Twitter is not for stupidity, I use it to follow people of substance).”

In light of the empirical discussion, the youths’ use and appropriation of social networking sites such as Facebook and Twitter emerge as an “extension of the socially reproduced segregated spaces that they live and school in” (boyd, 2013, p. 204). Their place of residence and origin as the slum of Kibera as well as their perceived lower status leads to their fear of social exclusion in the spaces created by the use and appropriation of the mobile phone and the mobile Internet. In the rare instances that the youth networked offline and online with people drawn from a higher social class or strata, they were often foreigners. They were drawn from countries such as the USA, Finland, Norway or China. The only youth who reported that the mobile phone was helping them to connect to new social ties were part-time tour guide Jackson (27), part-time university student and entrepreneur Francis (28) and volunteer Susan (28).

The mobile phone as an office

Jackson and Francis described their mobile phones as an *office* because various foreigners who wanted to visit Kibera often contacted them. The two youth had previously participated very actively in community projects so they had very many social ties from donor communities and international slum volunteers. Consequently, their phones enhanced their communicative abilities by helping their international networks to communicate with them. In some cases, foreigners familiar with Kibera would distribute their contacts and Facebook details to other social ties who were planning a visit. Similarly, Susan had a vast network of foreign social ties that she acquired when she volunteered at an international first-aid organization. Therefore, she used her social networking sites to chat with the international contacts. However, none of the youth were actively using their social networking sites and mobile phone to maintain social ties with higher class or strata Kenyans. This is because the young people’s place of residence as Kibera slum in a hierarchical Kenya restricts their appropriation of the mobile phone for the creation and extension of social ties with higher class and higher income Kenyans from upper-class gated communities or middle-income housing estates. The perceived lower class of the youth and their place of residence and origin act as constraints to the kind of social ties that they can form within Kenyan society. This is because their place of origin is perceived as dangerous

and as they are widely perceived in Kenyan society as the “other, the deviant and what does not belong” because they are slum residents (Hall, 2013, pp. 257–258). Consequently, the contextual mobility that the phone facilitates so well by compressing distance, time and space is limited by the existence of the residential and social segregation they experience offline.

Conclusion

Academic discussion of social classes and stratification within Kenyan society is absent from the ICT ecosystem literature. The policy and media discussions around ICT and mobile ecosystems in Sub-Saharan Africa are heavily focused on infrastructure and access. This paper concludes that the mobile phone eases communication and strengthens existent social ties for the youth of Kibera. However, the youth predominantly use the mobile phone to network with those in the same class and place of residence. More than “71% of the urban population in Kenya resides in a slum” (Mutisya & Yarime, 2011, p. 197). However, it is also the same population that makes up majority of the “mobile phone inclusive market” (Karugu & Mwendwa, 2008). Therefore, the issue of class and stratification within the Kenyan ICT ecosystem definitely deserves more interrogation so that the diverse user needs in Sub-Saharan Africa countries are met. In a transitional continent filled with diverse cultures and economies, such research can effectively facilitate how countries position themselves within the global ICT ecosystem (Toivanen, 2011, p. 35). A critical realist approach such as the one employed in this paper reveals that the interaction between technologies and low-income contexts is not always a seamless interaction. Future research can interrogate how the social, cultural and political structures within which users of technology in Sub-Saharan Africa are embedded in affect how they use and appropriate technology.

In this particular case, there is evidence that the mobile phone and the Internet are potentially transformative technologies that provide social spaces for enhanced social networking. However, the use and appropriation of the same technologies also reveal that online interactions and networks are replicated from existent offline interactions. Technology is not obligated to seamlessly integrate into contexts and spaces. It can in fact “amplify the structural inequalities” and divisions that already exist within that society (Toyama, 2011, p. 75). Therefore, it is necessary that each and every context within the ecosystem is analyzed with user-centered methodologies so that the interactions between “networked element providers, the network operators, content and application providers and the final consumers’ are enhanced” (Fransman, 2010, p. 8).

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Appendix. Demographic profile of the sample

Name, age and gender	Education level	Profession	Village
1. Francis (28) (M)	University	Part-time university student NGO work Small-scale business	
2. Sam (28) (M)	University	NGO work	Karanja
3. Diane (20) (F)	College	Part-time college student Family business worker at bar and mobile money shop	Kianda
4. Moha (19) (M)	High school	Youth group coordinator Family business work	Kianda
5. Coby (24) (M)	College	Full-time college student Self-help group participant	Kianda
6. Rythmix (28) (M)	College	Barber shop owner DVD shop owner Reggae artiste Volunteer in self-help group	Makina
7. John (21) (M)	University	Full-time university student Local youth politician	Makina
8. Naima (20) (F)	University	Full-time university student Volunteer at self-help group	Makina
9. Susan (28) (F)	College	Volunteer at local groups Part-time jobs when available	Fort Jesus (Olympic)
10. Brian (28) (M)	Primary school	Gym instructor Manual part-time jobs based on availability- such as cleaning and building	Gatwekera
11. Felista (20) (F)	University	Full-time university student	Kianda
12. Pat (20) (F)	University	Full-time university student	Kianda
13. Liza (25) (F)	University	Videographer, designer and part- time university student	Ayany
14. Tracy (23) (F)	University	University student and waitress	Makina
15. Neema (23) (F)	High school	Adult literacy courses Housewife	Kianda
16. Norah (18) (F)	Primary school	Assistant at family-owned grocery shop	Kianda
17. Jackson (27) (M)	College	Slum tour guide Self-help group coordinator Activist	Makina
18. Collo (25) (M)	High school	PlayStation shop owner	Karanja
19. Paul (19) (M)	High school	Self-help group volunteer Actor	Kianda
20. Tom (22) (M)	Primary school	Any job that is available (Hustling)	Kianda
21. Karen (21) (F)	College	Hustling	Kianda
22. Dave (28) (M)	College	Job based on availability Youth group member Media trainee	Olympic

Key:

*(F) For female**(M) For male * Pseudonyms are used to protect the identities of the residents due to ethical considerations of privacy*