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The 'empowering' capacities of mobile telephony for development: perspectives from the global South

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Abstract

Studies across the world indicate that new mobile mass communication technologies, especially the mobile telephony empowers people to do things in unique ways by circumventing time and space constraints. The optimistic view of empowerment sees the mobile telephony as an empowering tool, while the pessimistic view considers technologies as disempowering and in some cases reinforcing existing power imbalances, hence amplifying disparities. This paper uses Amartya Sen's capability approach to examine the 'empowering' capacities of mobile telephony and to highlight the elements of 'functionings and freedoms and capacities' as useful gateways to examining what Wirth et al (2008) termed the mobile phone appropriation (MPA) model.

The paper finds that empowerment discourse is almost always limited to economic empowerment (Kulb et al. 2016), while ignoring other issues such as gender roles, societal norms, patriarchy and violence against women which are potent and active in women's lives (Malhotra & Schuler, 2005). The paper concludes that although mobile technologies provide more possibilities for communicating and doing more with technologies across distances, new technologies may not be the panacea for empowerment or positive social transformations due to infrastructural, cultural and contextual factors. In the end, access to new media such as the mobile telephony could simply mirror the gender, and rich-poor, or north-South divide with respect to access to older ICTs.

Keywords: *Empowerment, capacities, access, developing world, ICTs, mobile telephony*

Introduction

Technology is key to people's empowerment. This attribution is due to technology's ability to bypass traditional processes and empower individuals through networks, information, and digital trade (Taddeo, 2016). Citing *Ushahidi*, a Kiswahili term loosely translated as witness (an open-access platform initiated to map out violence breakout in Kenya, Taddeo demonstrates how technology can be used in emergency situations to alert, report, monitor and evaluate violence in given communities. Technology fortifies the notion of human rights and social justice quite literally, at the touch of a press button, yet driving a wedge between those with access to technology and those without. Campbell (2018) advises that affordances of mobile technology should be assessed for their impacts; for instance, in causing distraction for children in classrooms (Lang & Javernpaa, 2007), drivers on the road (Wundersitz, 2019) and they can be addictive Khang, 2012) among other undertones.

The concept of empowerment in relation to mobile telephony is akin to a double-edged sword. Use of mobile telephony for empowerment can have both favorable and unfavorable outcomes and consequences depending on usage in varied contexts. This double sword conceptualization of empowerment has given rise to further segregating terms such as gender divides, gender divides where for instance males often prey on how females are using their phones (Komen, 2020) due to patriarchal constellations (Svensson & Wamala, 2016). In Africa, where there are high records of mobile telephony access and use, for both feature and smartphones, (Laura &Johnson, 2018), it would appear that the question has now shifted to what kind of phone one has rather than who does not access a phone (Komen, 2021) and indeed as observed by Svenson and Wamala (2016), there is absolutely no doubt that the proliferation of the mobile telephony has opened up new avenues and possibilities for development. Mobile phones remain conduits for connecting and channeling useful information to enable the users to make useful, meaningful and transformative decisions leading to desired socio-economic changes (Feroz et al, 2020; Komen, 2023; Komen & Ling, 2021; Komen, 2023). This paper contributes to these debates by looking at some elements of empowerment through Sen's capability approach (1999) and mobile communication through mobile technologies' wider conceptualization of human development, women agency and mobile technologies and mobile phones, microenterprises and development as identified by some scholars. I concur with scholars who claim that real social change may not be possible unless power inequalities between marginalized communities, groups or individuals and elites who make policy and aid decisions are addressed (Melkote & Steeves, 2015; Pettit, 2012).

Origins and background of Empowerment

Schools of thought such as Gandhi's, feminism, Freudian psychology, Liberation theology and black power movement have been cited as encapsulating the genesis of empowerment discourse (Cornwall & Brock, 2005; Simon, 1994; Swain, 2012). Critical insights on empowerment discourse are traced to Paolo Freire's work on pedagogy of the Oppressed. Arguing from transformative education standpoint, Freire's empowerment as seen in the education philosophy, should enable inside power of individual learners and the teacher to fuse (Freire,1970). For Freire, education is never a deposit exercise, where the teacher is perceived as all-knowing and emptying that knowledge to a naive clueless or passive learner. He argues that empowerment happens when learning is student-centred and not teacher-centred. It is therefore not a case of those in authority donating power to the powerless, but rather creation of enabling environment where power circulates and learning happens.

Several definitions have been given for the concept of empowerment, some of which I wish to highlight here. According to Melkote and Steeves (2015), empowerment is the process by which individuals, groups and organizations gain control and mastery over their social and economic conditions and democratic participation in their communities. This definition points to power shifting away from the hands of the few powerful, dominating the consciences of the masses, to people having to use their power to decide their destinies. This means that empowerment does not only enable them to express themselves but also gain power and overcome the domination to which they are subjected (Perkins & Zimmerman,1995; Wise, 2005). This conceptualization of empowerment is in tandem with Amartya Sen's Capability approach that equates empowerment to development by theorizing development as 'expanding freedoms that lend themselves towards the capacity of individuals not only to assess, but also to have the capability to transform, their situations' (Sen, 1999, pp. 3–4). Empowerment is, therefore, geared towards making lives better within individuals and communities bringing about the required change (Gutierrez & Ortega, 1991). I see empowerment as that process where an enabling environment has been created that gives those often-marginalized space to self-express and challenge those limiting aspects of their lives that might be contextual, cultural and in some cases socio- technological and politically engineered, and that this does not solely depend on the agency.

Theoretical framework: Sen's Capability approach

The Capability approach (CA) is defined as the freedoms of individuals to lead the kinds of lives they value and have reasons to do so (Sen, 1999). Sen's CA has been referenced for understanding freedoms in the development contexts and in particular the area of mobile communication by Smith et al. (2011) who see mobile phones and altering users' capabilities by increasing access to timely and relevant information as well as the expanded possibilities for connectedness between people. There is a plethora of studies that have used CA framework as a means for understanding the implications of ICTs for development goals (Anderson, Groudland & Wicandler, 2012, Gasper, 2002; Haennsegen & Ariana, 2018; Hamel, 2012; Ranis & Zhao, 2013; Zheng, 2009; Ranis & Zhao, 2013,). From the CA perspectives, ICTs hold the potential to enhance ability for individuals to, "Lead the lives they have reason to value" (Sen, 1999, p. 293). ICTs do not guarantee empowerment, however certain affordances of the ICTs such as mobile telephony enhances such freedoms to choose a life that they have reason to value (Komen, 2018; Komen& Ling, 2021; Mefalopolous, 2008). This paper discusses empowerment using CA elements: Freedoms, choice and functioning's as applied in mobile telephony.

Empowerment as Freedom

The role of the mobile phone is typically "freedom-enhancing" (Sen (2010, p. 2) so that – as a resource – it is subject to conversion factors like computer literacy and the infrastructural context, just as 'cars and bicycles expand people's abilities "to move freely from place to place" (Oosterlaken, 2011, p. 426). Freedom here may appear unlimited if you consider the freedom to text, call, send and receive money, decide who to include in the phone book and who to exclude, who to connect and who to disconnect from, when to pick your phone when it rings and when not to, how to engage with markets for trade and the like, yet again, these freedoms often get a buttress in light of other context specific realities.

An important issue raised by the Capabilities Approach is that while access to a basic good, is a prerequisite to its usage, individual differences, capabilities and choice play a role on the use, value

and application of these goods (Campbell & Komen, 2022; Komen, 2017; Feroz et al; Summers et al. 2020).

Going back to 'choice' and 'functionings' as stated by Amartya Sen's CA, Zheng and Stahl (2011 cited in Haennseng (2018) suggest that technology may influence people's agency and can choose their functioning's. Scholars have argued against this purely instrumental view of technology because humans are often embedded in a socio-technological context which forms part of their everyday life (Haennseng, 2018; Campbell & Komen, 2022; Komen & Ling, 2021; Komen, 2019). As ably argued, "Technology is not a mere "condition" for human being to achieve human ends; rather, human existence is already a human-technological existence" (Coeckelbergh, 2011, p. 86). Technology finds meaning in its use within a context. Operationalization'sd of the CA in the context of ICT and development depicts a broader conception (Gigler, 2004; Kleine, 2013; Miroro & Adera, 2014)

The question of choice connects CA and ICTs by enlarging user's choices in access to useful information. Consequently, Choice must be met by ICT's availability, affordability, and the skills required to operate it (Kleine, 2013). Similar to this depiction of technology as a contextual element, Gigler (2004, p. 9) states that "ICTs can play an important role not only in their own right, but can act as an "agent" for the strengthening of the poor's capitals in multiple areas" These operationalizations of the CA show the transformative nature of information and communication technology. Some CA scholars state that technology, be it an isolated technical object or the sum of all technical artefacts, interacts or co-evolves with the larger social context (Oosterlaken, 2011, p. 429). The sociologist Ling (2012) by reviewing the history of clocks, cars, and cell phones, similarly argues that these objects have become embedded into our social fabric and now constitute part of the structures within which we learn to act and behave.

Application of Sen's CA and mobile communication in development empowerment

Sen's CA approach in development related studies and in particular within the use of mobile telephony can be argued from the opportunities to take actions and activities that people wish to engage in as well people's capabilities to function and be who they want to be. These beings and doings, are what Sen calls achieved functionings, and together they constitute what makes life valuable (Sen, 1999). Functionings include working, resting, being literate, being healthy, being part of a community, being respected, and so forth (Otieno & Liyala, 2018). The duo used Sen's CA and in particular the concepts of 'functionings' and 'Freedoms' to explain how the framework is useful in explaining the mobile money transactions from a user's functionings and freedoms. This framework in their opinion looks at peoples' freedoms and the means that enable them attain such freedoms. They further recommend CA for studying societal development that focuses on the people, the development yearned for and the means to attain such development.

Alampay (2003) applied Sen's CA to the access and use of ICTs. Based on household surveys conducted in urban and rural barangays in Puerto Princesa City, Alampay analyzed access beyond the traditional method of considering teledensities and number of Internet service providers (ISPs), to focusing on key demographic traits in a community and how these influence their capabilities, functioning and freedoms with respect to ICT use.

CA is an approach that emphasizes the capabilities of both the technology and user within context to co-exist while delivering social transformation. From a mobile communication front I see the integrated mobile phone appropriation (MPA) as being closely linked to CA. According to Wirth, et al. (2008), this integrated model can be used for ICTs. Although, taking cues from adoption theories

such as Diffusion of innovation, Theory of planned behavior) as well as the 'appropriation' studies, they argue that closer attention needs to be paid to the process of appropriation of technologies, which moves away from the question of who has access, to how people use their mobile phone (Wirth and colleagues, 2008).The trio further argue that mobile phone can no longer be conceived as a single innovation, but one that is rapidly embracing different functionalities and services. This process of 'appropriation' according to these scholars is what has seen studies use different metaphors such as; "domestication" (Berker, et al., 2005; Silverstone & Haddon, 1996), "social shaping" (Lievrouw & Livingstone, 2002) and "framing" (Goffman, 1974; Ho¨flich, 2003; Oksman & Turtiainen, 2004). Additionally, Wirth and colleagues opine that new communication technologies are predestined to re-invention, as they commonly constitute a bundle of technological functions and services that lead to a vast variety of applications. The complex nature of application of the mobile telephone for varied uses by users is not only due to the capacities or affordances of the mobile technology but also the capacity of the user to manipulate or appropriate the technology. Within the CA framework, the concept of appropriation can be housed under the various elements of CA such as functionings, choices, freedoms and conversions.

Although, MPA is not necessarily an extension of CA or vice versa, certain tenets seem to connect. In the discourse of empowerment therefore, both CA and MPA would advocate for complex interrelationship between users, technologies and contexts based on identified needs. The empowering capacities of say mobile phone would not deliver empowerment if not understood within appropriation or functioning choices and freedoms of the users within their contexts.

Mobile telephony and human development

Mobile phones have relatively low physical infrastructure requirement and can reach even the remote parts of rural contexts with ease. Mobiles also require basic literacy making the barriers to use much lower than with other ICTs. Earlier studies linked mobile telephony ownership to higher economic growth (Castells et al, 2007; Vodafone, 2005), having greater impact on human development, enhancing democratic governance(m-governance), political movements (Rheingold, 2012) and other broad based development spaces and areas such as health, (m-health), education (e-learning and m-learning), agriculture, employment, crisis prevention and environment consciousness around the globe.

According to UNDP report (2010), it is claimed that mobile governance or simply m-governance expands access to information and communication channels, hence creating new avenues for people's participation and giving new voice to those who have historically been marginalized. This sounds good at face value; however, access must lead to freedoms of disadvantaged people within societies, especially for women in highly patriarchal societies who suffer from precarities (Komen, 2020; Komen & Ling, 2021; Svensson & Wamala-Larson, 2016). In many cases mobile phones are handed down to wives by their husbands, often in poor conditions and are at lower functionality level (Komen, 2016a, 2016 b, 2020, Komen & Ling, 2021; Swain, 2012)

Mobile phones can bolster personal security by keeping people in touch with each other in precarious situations such as natural disasters, conflicts, criminal or gender-related violence, as well as man-made risks such as cattle rustling in pastoralist communities (Komen, 2016) and rescue girls from outlawed practices such as female genital mutilation (Komen, 2014).

Mobile telephony is a 'leapfrog' technology useful where there are no electrical grids, base stations and sometimes powered with low-cost generators that require low-energy inputs. Mobile telephony in developing contexts is hence useful because unlike other digital devices, mobile phones only require basic literacy, and therefore can be used by a larger segment of the population than say, computers, which usually demand higher skill sets. Furthermore, mobile devices are user friendly, and require few special skills for their use — further lowering the barriers to entry, compared to other modern ICTs. Finally, mobile access is relatively affordable and for many households offers an efficient use of limited resources, while significantly enhancing their capacity to communicate and access public services (Donner 2010; Hellstroem 2008; Rashid and Elder, 2009).

Alone, mobile phones will neither pull people out of poverty, nor propel democratic governance. They must be part and parcel of broader development agendas. Mobile phones can help poor people leverage their resources and knowledge to enter the marketplace, demand public services and have a voice in governance processes (Jagun et al., 2008). This is where simple human adaptation and innovation is driving mobile penetration in the South, with people finding the means and mechanisms to access

Sharing mobile devices between family, friends, and neighbours (Burrell 2010; Komen, 2017; Steenson & Donner 2009) or using multiple subscriber identity module (SIM)cards on a single mobile device helps people get optimal rates in mobile networks, particularly where pricing schemes change with the time of day. In many countries, short message service (SMS) or 'texting' is much less expensive than voice calling, leading to the growth of the 'thumb culture' (Glotz, et al., 2005.

Women agency and the mobile technologies

Whenever the term marginalized communities are used, women and young women are quite often the focal point. This is because most societies in the developing world are patriarchal in nature hence the ubiquitous subjugation of women is often obvious (Komen, 2014; Komen & Ling, 2021; Stark, 2017; Morownowski , 2018; Wakuna, 2012; Svensson & Wamala-Larsson, 2016). Women empowerment describes the capability of women for self-determination; to take control over their circumstances and to realize their aspirations (Kebeer, 1999; Sen, 1990). The emphasis is on 'agency' described by Kabeer (1999) as the ability to define goals, have meaningful choices and to act to achieve desired outcomes (Sen, 1999). Women's agency can be exercised at the individual's cognitive level such as reflection and analysis, as well as at relational level and collective societal levels often seen in decision making processes, negotiation, resistance, and manipulation (Yount et al., 2015: Komen, 2020). In poor and rural communities with challenging healthcare access, mobile phones and phone-based services could be seen as logical solutions to improve service access (Ling & Xiao, 2012; Walsham, 2010, p. 3). Development then is understood as the freedom of choice (Kleine, 2010), derived from the Empowerment, the Sustainable Livelihood as well as the CA frameworks. It is therefore paramount to note that freedom cannot be achieved if there is no liberty of choice and use of choice to achieve choice. Variations in the choices that persons within a context have often reveal complex outcomes.

In their study, Pei and Chib, (2021) argue for a non-techno deterministic view of empowerment when it comes to examining its import for development. While noting the shortcomings of dichotomy of dis-empowerment studies, the researchers challenge techno-determinism and structural functionalism embodied in a prevailing gender (dis)empowerment dichotomy, and instead reveal the contextually situated and dynamically negotiated techno-socio relationships. While mobile phone reinforces structural constraints via facilitating access, surveillance, and intervention from

those of higher patriarchal statuses, (Komen, 2016; Komen & Ling, 2021; Svensson & Wamala-Larson, 2016) it simultaneously enables women's strategic responses involving avoidance, accommodation, and collaboration. The constraining yet empowering processes conceptually make the functioning of the mobile phone as socially catalyzing the development of self-consciousness by women, and furthermore, the clustering of awakening individuals toward emergent female collective power (Pei & Chib, 2020, p.1) According to Blumestock and Eagle (2010), women are more likely to borrow a mobile phone leading to limited access and control over the device (Burrell, 2010). Additionally, Wakuna (2012) notes how borrowing mobile telephony devices can lead to inequality, considering who is likely to borrow or share it even though it can also empower women (Calvin, 2014). Additionally, Porter et al. (2020) assert the presence of little evidence to show that women can achieve equal rights, resources and power when it comes to mobile phone use. It is possible to presuppose from the foregoing, that mobile phones effects vary as per areas of inquiry, including digital inequality, social networks, coordination and mobility.

Mobile phones, microenterprises and development

As the development of mobile technology has advanced, a gap has emerged between those who have access and those who don't, a situation dubbed 'digital divide' (World Bank, 2016). The claim that internet connection can lift people out of poverty has also been made challenged by Yin (2019). There is a strong claim that the economic impact of mobile phones on microenterprises (i.e. reducing transaction costs, increasing income and productivity, and enhancing market efficiency and competition) is fairly well established (Donnavan, 2010; Donner & Escobari, 2010; Wachira, 2003). The benefits of mobile phone use have been stressed within microenterprises and how it can not only be used to enhance women's entrepreneurship but also lead to increased revenue, enable mobile money transactions and improve contact with customers (Islam, et al., 2018; Jagun et al., 2008; Pei & Chib, 2021; Perekwa et al., 2016).

However, other researchers have looked for non-economic outcomes of mobile phone use (Alampay, 2006; Horst & Miller, 2006; Komen, 2014, 2016, 2017; Komen & Ling, 2021; Sridhar & Sridhar, 2006) including psychological well-being of mobile phone users (Bhavani et al., 2008). According to the GSMA (2021) study, women felt safe and could access useful information that would have otherwise been difficult to get. Smith et al. (2011) report that mobile phones strengthen family ties and also promote feelings of well-being. Other research suggests that mobile phones may improve a woman's sense of control, increase self-esteem and self-confidence, and positively alter power relationships in a positive fashion (Bayes, et al., 1999; Garrido & Roman, 2006; Huyer, 2005; Maier & Nair-Reichert, 2007; Taachi & Tripta, 2015).

Agricultural Extension services and mobile empowerment

Agricultural extension officers are trained Agricultural officers tasked with delivering timely relevant information to farmers often living at the rural areas. Digital technologies have been seen as transforming agricultural extension services by expanding accessibility to agricultural information ranging from plant variety selection to harvests, marketplaces, and weather forecasts. Extension services increase farmers' depth of knowledge through a plethora of ways such as exhibitions, prototype plants, training, and discussion groups, among others (Muyanga &Jayne, 2006).

Extension services allow for knowledge transfer. Even though farmers already have a great understanding concerning their surroundings and agricultural system, an extension service may

provide them with more expertise (Danso-Abbeam et al., 2018). Extension programs provide farmers with research-based knowledge and skills that are vital to their success. Oakley and Garforth (1985), for example, argue that farmers acquire new abilities when they use extension information. These new skills will transform farm productivity (Danso-Abbeam et al., 2018)

In recent past, mobile telephony has been incorporated to this transfer of knowledge between agricultural extension officers and farmers in their respective contexts (Chew et al., 2015; Deribe et al., 2018; Komen, 2020; Komen, 2016;). The informational exchange between the agricultural extension officer and farmers would range from sharing pictures of farm crops, videos if farmers have smart phones the like. The extension worker would then respond via same means and sometimes would purchase the required pesticides or fertilizers needed after the farmers had send the money to him via mobile money transfer dubbed (mPesa).

Bottlenecks for empowerment

Although empowerment has been made possible through the mobile phone as Sen's opined in his CA approach, whether by getting connected to networks beyond close circles (Summers et al., 2020), engaging in business opportunities for small and medium enterprises, sending mobile money for pay bills(Deribe et al, 2018; GSMA , 2021; Komen, 2016) securing and repayment of bank loans through the mobile banking or specifically linking empowerment to groups such as women empowerment groups *Chamas* (Komen & Ling, 2021), empowerment is laced with bottlenecks. For instance, those wielding power try to create divisions among members in order to disrupt political gains (Olson, 2020). Additionally, a lack of common focus on what aspects of empowerment are needed and what value is accrued has also been a key undercurrent for empowerment discourse (Pansardi, 2021).

Melkote (2018) argues that lack of technological know-how and inadequate skills for communities has been a major setback to empowerment. Even though women may desire, even have the requisite skills to exercise the 'functionings' and 'choices' and exercise them, certain challenges persist. Kwanu and Kwabena (2018), highlight that microenterprises, although celebrated for providing business outlets and creation of employment, are confronted with challenges such as lack of access to credit, managerial skills, and a low level application of technical know-how.

Future directions for empowerment discourse in mobile media communications studies

There is a need to further examine the paradox of access when it comes to 'empowerment' facilitated by mobile telephony. The 'Digital revolution' in Africa is primarily catalyzed by the relatively high internet and mobile penetration costs, hence the need to relook the complexities that make freedom, choices and functionings of the mobile telephony not to be fully exploited. What are the structural, infrastructural, cultural and techno-social impediments are there to design appropriate technologies for domestication and appropriation purposes? The paradox of access has presented us with further divides even in places considered to have relatively high access to mobile telephony. Several divides emerge such as digital, gender, and rural versus urban dichotomies that have driven society into the haves and have nots. It is prudent to consider a new path of establishing context specific bottlenecks to avoid assuming that empowerment happens across the board in a similar path.

Empowerment discourse through the CA approach has engendered certain nuances and link for development, however, it is important to see certain unvoiced fears such as data security, surveillances and privacy concerns. Mobile telephony ought to be seen as a complex constellation, its applicability should be seen from a myriad of grounds, namely, context, complexity, capacity of the user, affordances of the technology, and empowerment looked as a case of capacity to engage in acts that bring about Freedom, choice and enable functioning's that life people to the lives they have chosen to live.

There is need to also look into the various presentations of empowerment across the demographic characteristics of a people and also where there have been previous communication technologies before the mobile telephony and compare that with places that have had zero telecommunication.

Conclusion and recommendations

Mobile telephony is described and discussed to have contributed to socio-economic transformation of a people. It is also paramount to recognize that this is possible through exercising the capacities of mobile telephony as well as the user's ability to exploit the technology. The choice to function and decide what kind of engagement one have reason to believe brings them value, should not be lost in the excitement of the outcomes and consequences of technology alone but must include capacities of the user and affordances of the technology so as to appropriate the CA. It is important that technology such as mobile telephony be understood not only from an instrumental standpoint but also from how it is used within a context bearing in mind the complexities of intervening factors such as user characteristics and capabilities.

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