

Exploring the Contribution of Mobile Money to Well-being from a Capability Perspective

Abstract

This study considered the impact of mobile money on well-being and development from a capability perspective using data from the Upper East Region of northern Ghana. The evidence suggests varied capability enhancing benefits of mobile money use, ranging from empowerment to participate in the financial system, to choice and agency to meet various functionings that contribute to better well-being outcomes in employment, health and education. Erratic power supply and a poor network signal in some communities are unfreedoms that need removing for people to take advantage of the huge well-being and human development potential of mobile money. The long-term dependency on family and social networks for monetary support is a capability diminishing feature of mobile money. The study findings support the necessity to adopt a multifaceted and pragmatic conceptualisation of development in information and communication technology for development research.

Keywords: Mobile money; capability approach; well-being; development; ICTs; Ghana

Introduction

Mobile money has gained popularity in many developing countries over the past decade. Initially emerging as a means of peer-to-peer money transfers, it has developed into a powerful platform for a range of mobile-enabled financial services such as bill payments, savings and micro-credit. The evidence points to its growing uptake in many developing countries (ITU, 2013; McKay, 2015). For instance, since its launch in Kenya in 2007, M-Pesa reached 16.6 million active users, nearly two-thirds of the adult population in a decade (Safaricom, 2016). Mobile money is widely regarded as a

way around weak mainstream banking infrastructure in many developing countries (ITU, 2013; Maurer, 2012). It is commonly argued that the unique opportunities that mobile money make available can foster greater inclusion of the poor, the ‘unbanked’ and the underserved in the formal financial system (ITU, 2013; Ramada-Sarasola, 2012) and perhaps contribute to the attainment of the Sustainable Development Goals (SDGs) (Klapper, El-Zoghbi, & Hess, 2016).

Researchers have called for a greater understanding of the impact of ICTs on development from a capability standpoint (Bass, Nicholson, & Subhranian, 2013; Kleine, 2010; Zheng, 2009). However, relatively few studies of mobile money (such as Donovan, 2012) have applied the approach. Accordingly, this study draws on the capability approach (Sen, 1993, 1999) as a theoretical lens and qualitative data collected from the Upper East Region of northern Ghana, to explore the research question: how has the use of mobile money contributed to well-being outcomes? The increasing diffusion of mobile money in the region presents a clear need for further analysis of the contributions of this noteworthy contemporary financial services innovation to people’s well-being outcomes. The justification for taking a capability perspective is twofold: first, the concepts of the approach are well-suited to the study of innovations (such as mobile money) and provide a sound theoretical basis for a systematic and holistic analysis (Bass et al., 2013; Gigler, 2004; Kleine, 2010; Zheng, 2009). Second, the focus of the study is on how people are empowered by the opportunities presented by mobile money to pursue their well-being goals. Well-being is understood in the current study in terms of the freedom, agency and empowerment to make choices and act effectively in terms of health, education, employment, material living standards, and so on – dimensions that are usually missed by conventional income-based assessments of development (Stiglitz, Sen, & Fitoussi, 2010; Waage et al., 2010). Similarly, development is viewed as the expansion of people’s basic freedoms to lead the lives that they value (Sen, 1993).

In examining the links between mobile money and well-being, this paper contributes empirical evidence and insights pertaining to the expansion of people’s capabilities through mobile money use.

The next section gives an overview of the mobile money literature. Thereafter, the capability approach is discussed, focusing on its key concepts and their application to information and communication technology for development (ICT4D) research. Following a discussion of the study context and research methods, the findings are presented. The paper concludes after a discussion and an assessment of the implications.

Related Work

Prior work by both academics and practitioners have examined various aspects of mobile money. However, given the aim of this study, this review will focus on literature on mobile money applications and how they contribute to development.

One of the earliest papers on mobile money is that of Hughes & Lonie (2007). The paper reported on the launch of M-Pesa to meet a demand for cheaper and efficient financial services in Kenya. The authors assert that mobile money is used to move money for various reasons, including peer-to-peer money transfers and bill payments. Jack & Suri (2011) identifies several potential benefits of mobile money to households, namely: trade facilitation, making it easier to pay or receive payments for goods and services; improving household savings, inter-personal transactions and person-to-person micro-credit; enabling risk sharing; and receiving remittances from social support networks. They concluded that mobile money has transformed the financial architecture in many developing countries. Likewise, Donovan (2012) argues that mobile money has the most potential to transform entire economies when adopted across various sectors.

Previous research has established that mobile money contributes to development in diverse ways. In a randomized experiment that gave cash transfers to people in Niger, Aker, Boumnijel, McClelland, & Tierney (2013) found evidence that in households that received mobile money transfers, children consumed healthier and highly diverse meals daily. The authors also found that

mobile money transfers partially saved time and improved the intra-household bargaining power of women. Similarly, Suri & Jack (2016), in an assessment of the long-term poverty and gender impacts of mobile money, revealed that M-Pesa boosted consumption levels per capita and lifted an estimated two percent of Kenyan households out of poverty. The impact was more pronounced for female-headed households and driven by changes in financial behaviour, particularly, savings and labour market outcomes, which improved financial resilience. They concluded that mobile money use resulted in better livelihood choices for women, many of whom swapped subsistence agriculture for business.

In a study that analysed panel survey data from Kenya by Jack, Ray, & Suri (2013), it emerged that M-Pesa users interacted with personal networks regularly and made larger transfers over long distances. Kikulwe, Fischer, & Qaim (2014) in an analysis of panel data, found that mobile money had a positive impact on household income, investments in farm inputs, and better yields from agriculture. They confirmed that mobile money can help overcome some of the constraints on rural development and support poverty reduction. More recently, Ggombe & Matsumoto (2017) examined the effect of mobile money and financial behaviour using data from rural households in Uganda and established that its use improves the prospect of saving, borrowing, and receiving remittances. However, in a randomised controlled trial examining the impact of mobile money among employers and individual employees in Afghanistan, Blumenstock, Callen, Ghani, & Koepke (2015) found immediate and significant cost savings for employers. While they also found evidence of savings for employees that received salaries through mobile money, they found little consistent evidence of its contribution to well-being.

The Capability Approach

The capability approach has influenced global debates on human development since the 1980s and has shaped ICT4D research and practice. It emerged from the work of Amartya Sen (Sen, 1985,

1993, 1999). It is commonly seen as an alternative to the conventional ways of assessing development. The capability approach takes a broad view of development as the expansion of people's freedoms and the elimination of constraints (unfreedoms) to allow them to "lead lives they have reason to value" (Sen, 1999, p. 3). Alkire (2015) argues that the capability approach is a potent, relevant and usable framework for assessing well-being. From the capability perspective, well-being and development of individuals and groups can be understood through their ability to take advantage of opportunities offered by goods and services (or commodities) to improve well-being (Gigler, 2004; Robeyns, 2006). An individual is deemed to have less capability than another if they have less actual opportunity to live the life they value.

The concepts of functionings and capabilities are central to the approach. Whereas functionings represent what people can be and do (or 'beings and doings'), capabilities are the real opportunities available to them and the basic freedom to choose from a diverse combination of functionings. In Sen's words:

"The capability of a person reflects the alternative combinations of functionings the person can achieve, and from which he or she can choose one collection (Sen, 1993, p. 31)".

A mobile phone, for example, may enable the expansion of people's capabilities by offering them the means to be informed and to communicate (Smith, Spence, & Rashid, 2011). Another important aspect of the approach is the concept of freedom, which emphasizes empowerment and the agency to take advantage of opportunities (Robeyns, 2006). Sen differentiates the process and opportunity aspects of freedom. Whereas the processing element refers to the ability of individuals to act and attain whatever goals they value, the opportunity aspect relates to the actual prospects people have to achieve valuable functionings from a range of alternatives (Sen, 1999).

Personal, social, and environmental 'conversion' factors shape the degree to which individuals can transform a resource or service into actual functionings. For instance, a person's level of literacy

might influence his or her ability to effectively use a mobile phone for communication. Social conversion factors such as norms, practices, religion, politics, and power relations may also play a role in the transformation of resources into functionings (Robeyns, 2000). For example, if society frowns on mobile phone use by some individuals or groups, their ability to communicate and to be informed may be adversely affected. Finally, environmental conversion factors relate to elements of the person's physical surroundings that support the attainment of well-being goals, such as the existence of basic infrastructure. The availability of mobile network infrastructure at a given location is a prime example of an environmental factor that shapes their ability to be informed and to communicate using a mobile phone. Figure 1 is a depiction of the capability approach and is guided by similar illustrations by Zheng (2009).

[Insert Figure 1 here]

Figure 1 A Depiction of the Capability Approach (adapted from Zheng, 2009)

The capability approach has been operationalized across disciplines to evaluate development, including, remarkably by the United Nations Development Program (UNDP) human development reports (Alkire, 2005; Stanton, 2007). These reports suggest that the capability approach might be more pragmatic in assessing human development than economic measures like gross domestic product per capita and economic growth (UNDP, 2015).

There has been a growing use of the capability approach as an evaluative framework within the ICT4D domain (Heeks, 2010). It has been applied to address a diverse range of issues – e.g. e-development (Zheng, 2009), e-trade facilitation (Adaba & Rusu, 2014), e-government (Madon, 2004), social exclusion (Zheng & Walsham, 2008), student's use of one to one laptops (Hatakka, Andersson,

& Grönlund, 2013), ICT and empowerment to participate (Dasuki, Abbott, & Azerikatoa, 2014), and mobile phones (Smith et al., 2011) amongst others.

Despite its growing use, the capability approach has some potential drawbacks. First, it is challenging to apply because of its broad scope, flexibility, and underspecification (Zheng & Walsham, 2008). Second, Sen offers no prescriptions regarding how to operationalize the approach, which is compounded by the absence of a prescribed range of capabilities to evaluate. Thus, the selection of which capabilities to assess in a given situation is subjective and contingent on the interpretations of the researcher. As a result, the application of the approach could take varied forms depending on the researcher's normative and epistemological assumptions (Robeyns, 2006).

Context and Methods

Study Context

The research context is the Upper East Region, located in the northeast of Ghana and one of 10 administrative regions. Almost 80 percent of the population of the region live in dispersed rural settlements (Ghana Statistical Service, 2012). The main occupation in the Upper East is subsistence agriculture. The region has obstinately high levels of poverty as a significant proportion of the population regularly lack basic needs of education, healthcare and employment (Ghana Statistical Service, 2014; Whitehead, 2006). Notwithstanding the growth in the number of state and private banks, exclusion from the formal financial system is a significant problem in Ghana generally and the Upper East in particular (Aker & Wilson, 2013). However, there has been growing mobile phone diffusion across the country (The World Bank, 2014), with the current mobile penetration rate estimated at 116 percent (Okine, 2015).

This study was conducted in three towns of the region: Bolgatanga, Zebilla and Tongo. Bolgatanga is the regional capital as well as the biggest and most urbanised town in the region, with a

population of 131,550 (Ghana Statistical Service, 2012). In addition to subsistence farming, Bolgatanga is widely known for its crafts industry. Zebilla, capital of Bawku West district has a population of 94,034, while Tongo is the capital of the Talensi-Nabdam district, a largely rural setting with a dispersed population of 115,020. The three sites are similar culturally, socially and economically and in terms of access and use of ICTs and mainstream financial services.

The study focused on the users of a mobile money service launched in 2009 by MTN, a leading mobile network operator, in collaboration with 16 partner banks and a network of local mobile money agents (Adaba & Ayoung, 2017). MTN is currently the market leader in the highly competitive mobile telecommunications and payment space in Ghana with an estimated 15 million mobile network subscribers (Acquaye, 2015). Customers are required to register and pay a commission each time they use the service. At the time of the initial data collection, MTN mobile money was the only product of its kind in the Upper East Region.

Research Approach

In a bid to explore how mobile money contributes to well-being, an interpretive research approach was deemed suitable. Interpretive research stresses that knowledge is socially constructed and therefore subjective (Walsham, 2006). Interpretive studies attempt to understand phenomena from the point of view of the actors directly involved with it (Cavaye, 1996; Klein & Myers, 1999). Interpretive research is deemed appropriate for this study as it allows for a deeper analysis of the meanings that study participants attach to mobile money and its impact on well-being and human development.

Data Collection

Semi-structured interviews were the instrument of primary data collection. Such interviews give the researcher the flexibility to probe participants if needed (Myers & Newman, 2007) and are suitable for exploring complex issues because they can generate rich data for analysis (Schultze &

Avital, 2011). To this end, data were collected at Bolgatanga, Zebilla, and Tongo in two stages, in 2015 and 2017. The participants were selected based on one of three criteria: experience with mobile money as a user, an agent or as a representative of MTN mobile money. Interview guides were developed to suit each category of interviewees comprising four clusters of questions: the opportunities and challenges of mobile money, actual use, and how use has contributed to well-being. Informed consent and permission to audio record were sought prior to each interview. The details of the interviewees are anonymised to safeguard confidentiality and privacy.

The original fieldwork involved face-to-face interviews, while follow-up telephone interviews were used to collect additional information. In total, 31 interviews – each between 30 minutes and one hour – were carried out with 31 individuals (see Table 1). Documentary evidence obtained from various sources were used to supplement the interview data to allow for the triangulation of evidence. Publicly available information on the website of MTN, Ghanaian media reports and reports from non-governmental/international organizations were valuable sources of documentary evidence.

Table 1 Descriptive Details of Interviews

[Insert Table 1 here]

Data Analysis

The purpose of this study is to understand how mobile money has contributed to people's well-being. To simplify the analysis process, the theoretical concepts of the capability approach were operationalized to make them empirically applicable to mobile money (see Table 2). First, the choice of opportunities enabled by mobile money was operationalized as a person's capability set or potential

functionings, whereas achieved functionings represented the ability to make use of the opportunities to achieve actual well-being outcomes. Secondly, individual conversion factors are personal factors that can enhance the actual use of mobile money to achieve valued functionings. Environmental conversion factors, on the other hand, were the availability of basic infrastructure that supports mobile money use.

Table 2 The Operationalization of the Concepts of the Capability Approach

[Insert Table 2 here]

The audio files of the interviews were transcribed into text for analysis. The analysis process was facilitated by NVivo 10, a qualitative data analysis software package which allowed the organisation of the data into thematic categories. The first step in the data analysis process was to load the data transcripts and documentary evidence on NVivo. The second step comprised reading through the data transcripts line-by-line to identify and assign labels to key ideas identified. In the third step, similar ideas were then grouped together to form a category (Corbin & Strauss, 2014; Urquhart, 2013). The analysis was iterative and consisted of moving back and forth through the data to identify the salient ideas. Finally, the emergent themes were evaluated using the concepts of the capability approach as a sense-making tool (Klein & Myers, 1999). Aspects of mobile money in the data that appeared to have enhanced people's capabilities were matched and weighed against the array of capabilities discussed in the literature. The focus of this last step was to shed more light on the capabilities and actual functionings enabled by mobile money and their contribution to people's well-being.

Findings

In this section, the findings are presented in three parts, in line with the key themes that emerged from the data analysis: (1) the opportunities offered by mobile money (expansion of people's capabilities), (2) conversion factors, and (3) the outcomes realized by exploiting the opportunities (actual functionings attained).

The Opportunities offered by Mobile Money

The data analysis identified several opportunities linked to mobile money. People are able to send and receive remittances, save and make micropayments electronically, in a cost-effective, reliable and efficient fashion. Mobile money has made available alternative financial services to the 'unbanked' and largely underserved rural parts of the study area, giving people the freedom and agency to accomplish well-being goals. A participant articulated the opportunities of mobile money as follows:

“Mobile money let people receive money from relatives quickly to solve personal and family problems. Money can even be sent from overseas through this network. It is also a means to save.” – Mobile Money Agent 2, Tongo.

Although MTN mobile money started in 2009 with basic peer-to-peer money transfer services, it has gradually been enhanced and currently allows electronic bill payments, recharging of credit and payment for goods and services. In some parts of the study sites, mobile money is the only affordable and accessible financial service available to the poor at the time of data collection. Probed to compare mobile money to mainstream banking, an interviewee specified:

“Compared to similar services in the post offices and the banks, mobile money is fast and cheap. With the bank, I have to join a long line of people and fill in some forms. Through mobile money, all these are avoided.” – Mobile money user 1, Zebilla.

Another respondent confirms:

“The banks are always crowded and time-consuming, but with this service, you only need to give out a phone number and tell them what you want to be done and you are served accordingly.” –

Mobile Money User 4, Bolgatanga

Conversion Factors

A range of individual, social and environmental factors mediate the ability of individuals to transform the potential of mobile money into actual well-being outcomes. Access to a mobile phone is an important factor that determines people’s ability to leverage mobile money to improve well-being. However, some individuals can get around this obstacle by sending and receiving remittances through relatives that own mobile phones. Actual mobile money use to achieve valuable functionings is mediated by factors such as basic literacy, income, motivation, and trust in the innovation. It was also found that the mobile money agents played the intermediate role at the local level by assisting people to complete transactions, as articulated in the following quotation:

“As a mobile agent, I perform two major functions. Registered mobile money users can exchange the electronic money for the equivalent value in cash. I also take cash from people and generate the equivalent value in mobile money”. – Mobile Money Agent 5, Bolgatanga.

The availability and proximity of reliable and supportive local mobile money agents in a community is a social conversion factor that facilitated the use of mobile money to realize important functionings. Trust in the service and the mobile money agents was found to be high, as most interviewees perceived them to be ‘safe’. While none of the interviewees has been a victim of mobile money fraud, one had heard news reports of it. There are of course issues of weak infrastructure in the study context. Most of the participants identified irregular electricity supply as a key infrastructure problem. Power supply issues were at their peak during the period of fieldwork, where it was restricted to a few hours daily, known locally as ‘load shedding’. Another important environmental factor that negatively affected mobile money use is poor mobile network signal in some communities.

A weak network signal was particularly acute in parts of Tongo, one of the study sites, where nearly all interviewees complained about an unreliable network. One interviewee specified:

“Network failure is the main problem. Then also when the power goes out and the phone battery runs down, it is not possible to charge [the phone battery] for transactions.” – Mobile Money Agent 2, Tongo.

Table 3 provides a useful summary of various conversion factors that influence mobile money use identified in the analysis of the data.

Table 3 Conversion Factors

[Insert Table 3 here]

Outcomes

Respondents reported receiving regular monthly remittances through mobile money. A recurrent theme in the data is the use of such remittances to pay for their education-related needs, as confirmed in the following quotation:

“I usually receive money from my relatives through mobile money to pay my school fees and to purchase books” – Mobile Money User 14, Tongo.

Farmers use remittances to pay for seed for planting and fertilizer for their crops during the rainy season, which has contributed to food security and better livelihoods. Others have used such remittances to pay for health insurance, which enables them to access health services for free at the point of delivery. These have contributed to the expansion of capabilities and empowered people,

giving them freedom and agency to achieve better well-being outcomes of being educated and healthy.

Most of these remittances are usually received from relatives, however, recent reports show that mobile money is used for crowdfunding in times of crises. The analysis further suggests that mobile money has had a positive impact on the local economy by giving people the freedom to participate. Thus, they can earn a living and not have to count on the government for non-existent jobs. People are also able to purchase food and other essential services from the local market, as specified in the quotation below:

“The service has improved the lives of the local community in the sense that people can receive and send money to buy food, purchase seed for the planting season and help take care of their health needs.” – Mobile Money Agent 4, Zebilla

The findings also confirm that some people have leveraged mobile money to access microcredit, start small businesses and make bill payments. For example, some entrepreneurs and retailers have used mobile money to pay for goods remotely, to save time and travel costs, as the next quotation indicate:

“As an entrepreneur, mobile money helps in the running of the business since money can be sent to suppliers far and near to purchase goods to sell, this saves time and contributes to the growth of the business.” – Mobile Money User 11, Bolgatanga

Discussion

Informed by the study findings and prior literature, Figure 2 illustrates the linkages between mobile money and well-being and development. From a capability perspective, a significant proportion of people in the study sites suffer some degree of exclusion from the formal financial system that tends to exacerbate poverty, as they lack means and the freedom to improve their lives

(Donovan, 2012). Mobile money is increasingly accepted in the Upper East Region as an alternative to conventional banking. This has given people, particularly the rural poor, access to financial services without the need to travel to urban centres. In this regard, mobile money has satisfied a demand for cheap and reliable financial services, a much-valued functioning. The options of using the banks, mobile money or both, give people the freedom and agency to achieve other well-being goals. This finding is consistent with the extant literature that mobile money promotes the inclusion of individuals and businesses in the formal financial system through access to useful and affordable financial products and services that meet their needs and are delivered in a responsible and sustainable way (Demirgüç-Kunt & Klapper, 2012).

Scholars and practitioners have argued that financial inclusion of people at the ‘bottom of the pyramid’ supports poverty reduction and development (Bass et al., 2013; ITU, 2013; Kikulwe et al., 2014; Klapper et al., 2016; Sarma & Pais, 2011). Mobile money is an input or a resource and a means through which people can expand their capability set. This gives them choice and agency to achieve various functionings that contribute to improved well-being and development. However, it is important to point out that actual well-being outcomes could take many years to be manifest.

Mobile money is an important add-on to the functions the mobile phone, allowing individuals to receive (mostly urban-to-rural) remittances from family and other personal networks, save money independently and as a part of a savings group, and for crowdfunding in response to emergencies. Perhaps the main contribution of mobile money is directly creating job opportunities for people as mobile money agents or by allowing them to access microcredit. Retailers and other businesses are using mobile money to order goods from suppliers in other parts of the country. Thus, mobile money is promoting ‘fertile functioning’, where one capability promotes other capabilities (Wolff & de-Shalit, 2007). The benefits of mobile money are not restricted to individuals but have filtered through the community and have enabled collective capabilities.

The mobile money agents and relatives are critical enablers as they assist users that lack the basic literacy and the necessary skills to undertake such transactions. They play the role of infomediaries – mediators that help people access mobile money, make sense of it and use it (Bailur & Masiero, 2012; Fisher, 2010; Ramírez, Parthasarathy, & Gordon, 2013) – particularly where users lack basic literacy or technology self-efficacy to use the service independently. The agents act as ‘bridges to cash’ by providing information, training users to complete transactions and offering brokering services such as converting cash into electronic money and vice versa (Maurer, Nelms, & Rea, 2013).

[Insert Figure 2 here]

Figure 2 A Depiction of the Study Findings - Mobile Money and Well-being (adapted from Zheng, 2009)

Although mobile money has enabled the expansion of capabilities, there are unfreedoms and capability diminishing aspects that need to be removed to allow individuals and groups to take advantage of the potential of mobile money. While mobile money has allowed individuals and households to share risks through informal networks, it may also have a the capability reducing effect of fostering an over-reliance on networks of family and other social contacts for monetary transfers, possibly creating a kind of dependency syndrome that discourages them from participation in the economy (Jack et al., 2013). There have been recent press reports of the use of mobile money to perpetuate fraud, a prime example of another capability reducing attribute of mobile money. Furthermore, Carmody (2012) maintains that mobile money does not address the structural factors that cause poverty and financial exclusion. Finally, erratic power supply and a poor network signal in some communities in the Upper East Region remain unfreedoms that need to be removed for people to take advantage of the huge potential of mobile money to achieve improved well-being.

Implications

The findings that emerged from this study suggest some implications. They reinforce the view that mobile money might contribute to greater inclusion into the formal financial system (Donovan, 2012), through addressing the needs of the unbanked and underserved communities (Aker et al., 2013; Donovan, 2012; Duncombe & Boateng, 2009; Hinson, 2011; Storchi & Johnson, 2016; Suri & Jack, 2016). Insights from this study lead to the suggestion that given the capability enhancing role of mobile money, governments could help to create the enabling conditions for more people to achieve financial inclusion. However, this could contribute to human development outcomes in the years to come.

Human development is a long and difficult process that could take several years to be apparent and requires changes to policy and practice. The development and implementation of effective policies could help leapfrog weak infrastructure in the country to deliver financial services through mobile money. In this regard, the government can play a vital role in effectively regulating mobile money to promote a safe and stable financial system that protect users. This could help encourage confidence and drive up mobile money use to promote financial health (Arnold and Rhyne, 2016). Through a financial inclusion strategy, the government could offer a legal and regulatory framework to require interoperability of the various mobile money products in the market. Such a strategy should be integrated with overall national ICT strategies to make mobile money sustainable. There is the need for mobile money champions to inspire and motivate people to boost its use.

Linked to the foregoing are the implications of mobile money for poverty reduction. State institutions, micro-credit companies, and non-profit organizations could use mobile money to target low-income customers to help alleviate poverty by promoting micro-credit and savings. Second, rising mobile money charges in Ghana (Abban, 2016) could be a barrier to the growth of the sector. Tackling the growing problem of mobile money fraud and improving power supply and network signal strength can serve as a catalyst to further drive up mobile money use and will require public-

private sector collaboration. The potential benefits of overcoming these challenges are substantial. There is the need for partnership between the private sector, government and non-profit sectors and other relevant stakeholders to develop a common strategy to transform mobile money use into greater financial inclusion of the poor and the unbanked. Finally, steps could be taken by the government to address structural factors that contribute to poverty and financial exclusion.

Concluding Remarks

Exclusion from the formal financial system, particularly of the poor, is a huge problem in developing countries. Drawing on the capability approach and the analysis of empirical data from the Upper East Region of northern Ghana, this paper sought to explore the potential of mobile money to support the development of capabilities. In so doing, the study highlighted realised outcomes of mobile money use rather than just access. The findings show that mobile money has contributed to the expansion of people's capabilities, many of whom are poor and from traditionally unbanked or underserved sections of the population.

This research has some limitations that need to be acknowledged: first, the study did not capture trends in mobile money and well-being as the data are cross-sectional and reflect only a narrow period of time. Secondly, the study is based on a relatively small sample and might not reflect the situation in the rest of Ghana as only three sites in the Upper East, one of ten regions of the country were studied. While the current study contributes to the mobile money literature, its limitations suggest some potentially fruitful avenues for further research. Clearly, additional studies are needed to validate the findings and to further assess the contribution of mobile money to financial inclusion, well-being, and development. A national study across the ten regions of Ghana using a large and inclusive sample could provide additional insights into the composite interactions between mobile money and the expansion of capabilities, well-being and human development. Mobile money adoption rates have been increasing, thus a longitudinal study could reveal trends. Future research could adopt a survey

approach to assess the strength of the relationship between mobile money, the expansion of capabilities and actual functionings and to enhance the generalizability of the findings. Alternatively, a mix of quantitative and qualitative research methods could be applied in a future study.

Conflict of Interest

The authors declare no conflict of interest.

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Figure Legends

Figure 1 A Depiction of the Capability Approach (adapted from Zheng, 2009)

Figure 2 A Depiction of the Study Findings - Mobile Money and Well-being (adapted from Zheng, 2009)



