

MOBILE PHONES AND THE LIVELIHOODS OF INDONESIAN MICRO-ENTREPRENEURS: EVIDENCE OF CAPABILITY EXPANSION

Misita Anwar, Faculty of IT, Monash University, Australia; Makassar State University,
Indonesia, misita.anwar@monash.edu

Abstract

Mobile phone is one of a few technologies in the world that have created immediate and widespread of an impact mobile phones. The impact of the mobile technology for development has been seen from many different perspectives, but few empirical studies have investigates the technology in relation to human development perspectives and in particular Capability Approach. The present study fills this important gap in the literature. Focusing on micro-entrepreneurs in Indonesia including women and disabled micro-entrepreneurs, this paper investigates how the mobile phones create new and expand existing capabilities of micro-entrepreneurs in running business and improving their livelihoods.

Keywords: mobile phones, Capability Approach, human development, micro-entrepreneurs.

1 INTRODUCTION

Mobile phones and Micro and Small Enterprises (MSE) are regarded as making significant contributions to national development. MSE make important contributions to social and economic development especially in developing countries where they constitute the vast majority of businesses (McMillan & Woodruff 2002; Mead & Liedholm 1998). Important contributions include creating employment, generating income for poor and disadvantaged populations as well as social contributions to development through personal self-development, enabling individuals to gain experience, confidence and skills (Daniels 2002; Mead & Liedholm 1998). A vast collection of studies shows mobiles' use in micro and small business operation in developing countries and its contribution to their livelihood. The world penetration of mobile phones is unparalleled by any other communication technology. Based on ITU's (International Telecommunication Union) ICT key indicator, as of 2014, mobile phone subscriptions is reaching 7 billion by 2014, translating to 95.5% penetration globally (ITU 2014). The increase in penetration is extraordinary with a 34% increase since 2009. The International Telecommunication Union forecasts that penetration is expected to be 96% by the end of 2013 with 6.8 billion mobile subscriptions. Research into the spread of mobile technology in developing countries has been overtaken by the rapid dissemination of the technology itself, but it does show that mobile phones had many tangible effects on socio-economic development (Donner 2008).

A well-established set of literature within ICT4D explores the role of mobile phones in micro- and small-enterprises (e.g., Mbogo 2010; Katsina and Abdulkareem 2012; Sife et al. 2007; Abraham 2006; Aker 2008; Donner 2006a 2007; Donner & Escobari 2010; Esselaar et al. 2007; Frempong 2009; Horst & Miller 2006; Jagun et al. 2008; Jensen 2007; Kamga 2006; Molony 2008; Overa 2006; Samuel et al. 2005). A common theme that runs through these studies is that there is significant potential for mobile use to increase MSE productivity by improving sales and marketing, as well as procurement processes (Donner & Escobari 2010). The mobile's main contribution to productivity seems to be enhancing the livelihoods of many individuals in the MSE sector. The mobile phone has the potential to increase productivity in MSE but we have yet to see how it holistically impact MSE. Supporting evidence is currently limited with varied methodology. 'Research linking sectoral, household and community factors to MSE use of mobiles will deepen the insights available about this fast moving phenomena' (Donner & Escobari 2010).

While mobile phones and MSE studies have shown that mobiles can improve communication between MSE, customers and suppliers, there is little evidence to suggests mobiles are being used for information capture, storage or processing. None of the studies discussed have examined mobile use by women entrepreneurs, and how the mobile may be used to mitigate issues that may arise in balancing business with household responsibilities. None of those studies pay attention to how mobile phones may facilitate business processes for those micro-entrepreneurs who may be constrained, by for example, physical limitations or religious beliefs. The lack of current supporting evidence and the heterogeneity of prior research approaches (Jagun et al. 2008), however, indicate the need for more studies on mobile phones and MSE. More rigorous studies will have significant implications for the development community, about the role of small enterprises in developing countries, and entrepreneurship and livelihoods, and holistically understanding of the information society (Castells et al. 2007).

Within the literature on mobile's and micro-entrepreneurs there is the dominant economic bias and approaches to analysis simply on income and productivity. Development however is no longer conceived of and measured in economic terms alone. Development is increasingly seen as the broader development of human well-being or human development. Human development is shaped by Amartya Sen's (1985 1993 1999) work called Capability Approach (CA) which is a conceptual framework for evaluating social states by focussing primarily on human well-being. Rather than seeing a person's well-being as a utility and commodity command, the CA asserted that development

should be analysed from the point of view of people's *capabilities* to function, and the opportunities and freedoms which they have, to be and to do what they want to be and do. Thus, analysis should not stop at income and productivity but to assess the real capability of MSE in fulfilling their well-being and livelihood needs. By far, this is most important gap that needs to be filled.

This study focuses on understanding the significance of mobile use to micro-entrepreneurs' well-being in urban Indonesia. The paper aims to investigate how mobile phones support more than just income and productivity but the real capability of micro-entrepreneurs in conducting business using the CA. The locus is blind masseurs in Makassar and Bandung, Indonesia. The study adds to the description of the diverse ways of achieving possible *functionings* – by expanding the parameters of the *capabilities* for micro-entrepreneurs in conducting business while taking into account business ethics within micro-entrepreneurs communities and various limitations that may impede business development. This paper is structured as follows: the next section will discuss the CA and its relation with ICT followed by research methodology. Next, an outline of the research context of micro-entrepreneurs will be presented followed by the reporting of the research findings. The paper concludes with discussion of how the CA can be related to the emergent themes of this project and used to evaluate the contribution of mobile phones to the well-being i.e., family livelihood of micro-entrepreneurs.

2 THE CAPABILITY APPROACH

The CA has been recognised as a novel framework that can be used for, amongst others, the evaluation individual well-being and social arrangements, or for conception of policies about social change in society (Robeyns 2005). Developed by Amartya Sen expanded later by Martha Nussbaum and other authors (Alkire 2002b; D. Gasper 1997; Nussbaum 2001; Robeyns 2001) it is a critique for an economic and welfare- based approach to evaluation. The main feature of Sen's capability theory is the effective opportunities that people have to lead the lives they have reason to value. Sen (1999) argued that in social evaluation and policy making, considering the 'quality of life' means including consideration of the freedom of people to live the life which they want, and which they find valuable. There is a vast literature about the CA from different disciplines. Scholars and policy makers use the approach in a wide range of fields, most prominently in development studies and policymaking including ICTD, welfare economics, social policy, social and political philosophy.

The core ideas of the CA are *functionings* and *capabilities* (Sen 1999). *Functionings* are described enigmatically as the 'beings and doings' of a person, whereas *capability* refers to a person's or group's 'freedom to achieve' valuable *functionings*. Capability represents the potential sum of the actions that are open to a person from various combinations of *functionings*. Capability is a set of *functionings* (actions), demonstrating the person's freedom to lead one type of life or another. In other words, the term *functionings* can refer to realised or actual achievements and fulfilled expectations, whereas *capabilities* can refer to the effective possibilities of realising achievements and fulfilling expectations (Zheng 2007).

The relationship between commodities (goods and services), *functionings*, and *capabilities* is of particular importance. At the same time, it is important to distinguish between commodity, *functionings* and utility. Figure 1, provides an illustration of this relationship using the key concepts of the CA. Sen argues that goods and services are important only in the sense that their characteristics enable people to do and to be, namely, in the light of the *capabilities* that a person can generate from these goods and services. "A good has certain characteristics, which makes it of interest to people. For example, we are not interested in a bike because it is an object made from certain materials with a specific shape and colour, but because it can take us to places where we want to go, and in a faster way than if we were walking. These characteristics of a good enable a *functioning*. "The bike enables the *functioning* of mobility to be able to move oneself freely and more rapidly than walking" (Robeyns 2005, p. 9).

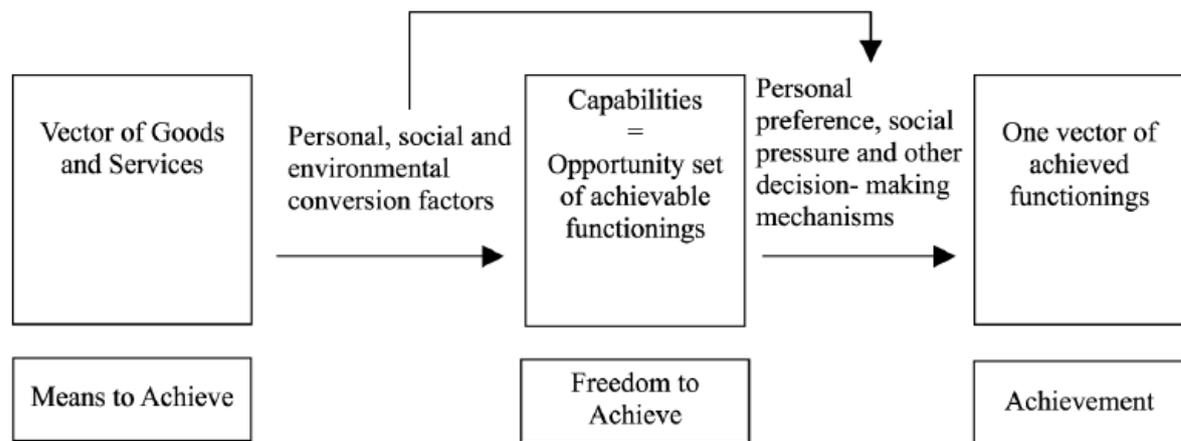


Figure 1. Relationship between resources, functionings and capabilities (Zheng 2007)

There are three groups of conversion factors that determine the relationship between a good and the *functionings* to achieve certain beings and doings (Robeyns 2005; Sen 1993). These are *personal*, *social* and *environmental conversion factors*. Mental and physical conditions, literacy, and gender are some of examples of *personal conversion factors* that influence how a person can convert the characteristics of the commodity into a *functioning*. Given the same mobile phones, a person who for example can utilise camera features of the device is potentially be able to achieve one more *functioning*, e.g., sending pictures to relatives, than those who could not. *Social factors* such as public policies, social norms and gender roles, are also capable of limiting or enhancing commodity to *functioning* conversion. In a certain society, where women are being prosecuted for mobile phone possession, it would be very difficult if not impossible to convert such commodity into any *functioning*. Similarly, environmental conversion factors (e.g., climate, geographical location or infrastructures) play a role in the conversion from characteristics of goods to the individual *functioning*. The lack of broadband infrastructure in rural areas is an example where this conversion would be problematic. The actual achievement of *functionings* is the chosen *functioning* within available *capabilities* which are subject to personal preference. These preferences and choices are again affected by personal, social and environmental characteristics, such as personal history and social influences (Zheng 2007).

In recent years an increasing number of scholars have discovered the potential of the CA derived from the spread of ICT. Although these studies utilise the CA for various objectives and applying a range of different methodologies, they all help in sensitising ideas, identifying categories – enumerating the personal and social variables that must be taken into account, and the respective outcomes that might be achieved. Some articles are geared towards theoretical reflection while others present more concrete detailed studies (Mansell 2002; Wresch 2009; Fernández-Baldor et al. 2009, Birdsall 2011). Some studies employed the CA for impact assessment frameworks for ICT in governance, policies, development programs or individual well-being (Alampay 2006a 2006b; Gigler 2004; Grunfeld 2007; Heeks & Molla 2009; Kleine 2009). There are studies that attempt to operationalize the CA (e.g., Kleine 2009) while several authors relate the CA to more general issues of ethics, engineering design principles, e-development, social capital and social inclusion (Osterlaken 2009; Coeckelbergh 2011; Johnstone 2007; Thapa et al. 2012; Zheng 2007; Zheng & Walsham 2008).

A conceptualisation of ICT within the CA was proposed by Zheng (2007) and Heeks and Molla (2009). Heeks and Molla (2009), extending Zheng (2007), stated that ICT, as well as being a commodity, could also be seen in four other ways: 1) conversion factor: ICT may assist in converting characteristics of other commodities into *capabilities*; 2) non-conversion factor: ICT may constrain certain *capabilities* and choices; 3) conversion factor enabler: ICT can develop other conversion factors, e.g., improve personal skills which can be a conversion factor in itself; and 4) choice developer: ICT can alter perceptions of personal needs and preferences.

Smith et al. (2011) specifically link mobile phones to the CA. The authors applied the CA to analyse existing research by categorising *functionings* created by the characteristics of mobile phones into three networking dimensions, namely, social networks, economic networks and governance networks. They argued that mobiles made substantial contributions to *capabilities* expansion and freedoms in economic, social, as well as governance. Such a link between mobile phones and the CA is complemented with empirical findings in our study (e.g., mobiles' role in running business). Finally, Toboso (2011) -- the only researcher so far to analyse the CA and its relation to ICT in the context of people with disability -- argued that the importance of human diversity in the *capabilities* and *functionings* approach called for incorporating disability into the analysis of well-being and quality of life. There are limited studies that link mobile phones, micro-entrepreneurs and the CA. This paper is one such study that will address this gap in the literature.

3 RESEARCH METHODOLOGY

This qualitative study aims to understand people's views and experiences, using a grounded theory approach. Interpretive approaches provide the insights necessary to appreciate participants' experiences and their own perceptions. The interpretative tradition regards reality as socially constructed (Patton 2002). The special slant of this study is rooted within the participants' social and cultural context.

The research strategy (grounded theory) constructs theory from the data obtained in the field and also guides data collection and analysis. Grounded theory methodology is an accepted approach in ICTD research but it has not been extensively used. As Urquhart (2012) observed, many theories used in ICTD are 'meta theories', e.g., the CA, actor network theory, policy studies, or econometrics. As an applied field with many reference disciplines and little indigenous theory, ICTD can benefit from grounded theory -- as much as the rest -- where theories are built from 'ground up'. It provides a systematic way of analysing data, and provides a chain of evidence, while at the same time avoids the 'nice story' accusation sometimes levelled at qualitative research. Grounded theory analysis is good for topics where limited theory exists (Urquhart 2012), and can assist in theory development.

The fieldwork was conducted in the city of Makassar and Bandung, Indonesia and several follow-up interviews were conducted also. The two cities represent the eastern part and the western part of the country respectively. A total of 40 micro-entrepreneurs altogether were interviewed for the whole project. In line with the methodology, purposeful sampling was initially used to identify certain participants who can readily articulate their experience of the area under investigation. Then, theoretical sampling was employed as the study progressed to select specific participants or other data sources, as well as directing interviews based on emerging theoretical concepts (Glaser 1978).

In-depth interviews in Bahasa Indonesia were used as the main data collection technique, although some observation complemented the interviews. Data collection occurred in the two major cities of Bandung and Makassar. The text from these interviews, which constituted the primary data, along with written fieldwork notes were analysed using grounded theory techniques. Data was coded and analysed in a constant comparative method as outlined by Glaser (1978) which includes open coding, selective coding, and theoretical integration.

Several questions to guide semi-structured interviews were developed. The field investigations addressed questions related to whether or not, and how, mobile phones contribute to well-being as perceived by micro-entrepreneurs. Questions in interviews were piloted and designed to solicit information about perceived well-being, the use of mobile phones, and whether or not, and how, mobile phones were contributing to well-being. Some demographic data was also obtained. A qualitative data analysis software called NVivo was used for data coding and management. NVivo allowed line-by-line coding and offers flexibility in arranging codes into categories.

4 THE INDONESIAN MICRO-ENTREPRENEURS

Micro-enterprises are the predominant form of business in Indonesia which could be found in urban and rural areas. The form of business include trading stalls and small stores, small manufacturers, transport providers such as motorbike taxi, and services such as tailors and motorbike repairs. While many of these enterprises are home-based, others are mobile or nomadic. Because barriers to starting micro-enterprises are relatively low, households or individuals may engage in more than one business. Even though these businesses do not provide massive growth, any gains in production and hence profit, are very important to the livelihoods of micro-entrepreneurs and their families.

Micro-enterprise plays a significant role to Indonesian nation development. They have historically been the main player in domestic economic activities, particularly as a large provider of employment, and they can be regarded as primary or secondary source of income for many households (Tambunan 2005). There are overlapping criteria of what constitute a micro-enterprise as used in Indonesia and by international organizations. In this study it is taken as businesses with a maximum of 10 workers, annual sales of Rp. 300 million (\$USD 23,000) and a total asset of not more than Rp. 50 million (\$USD 3,800) excluding land and buildings. Micro-enterprises have the biggest percentage of businesses, and accounted for more than 50.8 million businesses in 2008, or about 98.9% of the total number of enterprises in the country in that year. This figure increased to reach more than 55.8 million units in 2012. The continuous role of small and micro- enterprise as the locus of most employment is reflected in the increasing numbers of people employed in this sector. These enterprises absorb the biggest percentage of employees. In 2012, there were 99.8 million employees working in micro-enterprises which constituted 90.12% of the total labour force in all enterprises in Indonesia (Statistics Indonesia 2012).

The 40 participants in this study were chosen from a broad range of businesses sectors. Table 1 represent a summary of participants' selective demographics. Demographic information shows that participants span a wide range of business sectors, including retail, production, food and beverages, and services. Most enterprises in this study employ between 5-10 people. Eleven of these micro-entrepreneurs were self-employed with no support staff.

Demographics	Categories	No. of participants	% of participants
Type of business	Services	11	27.5
	Production and Retail	15	37.5
	Food and Beverages	2	5
	Production only	9	22.5
	Retail only	3	7.5
Income per month	Very low – low (< USD 150)	13	32.5
	Lower Medium (USD 150 – 230)	6	15
	Medium (USD 230 – 300)	15	37.5
	Upper Medium (USD 300– 460)	6	15
Gender	Male	19	47.5
	Female	21	52.5
No. of employees	0 – 1	12	30
	2	9	22.5
	3	3	7.5
	4	4	10
	5-10	11	27.5
Mobiles ownerships	1	31	77.5
	2	7	17.5
	3	2	5

Table 1. Participants' selective demographics

The monthly income derived from business varies, with a minimum of Rp. 600,000 (USD 45) and a maximum Rp. 6 million (USD 460). The average earning is approximately Rp. 3 million (USD 230). Educational data shows that most participants only finished secondary education. Most enterprises used simple technology, had limited access to credit, had limited managerial skills, and operated in the informal sector. Micro-enterprises were grouped according to their location (Bandung or Makassar), products or services categories (e.g., shoe-maker, furniture-maker, blind masseur), or those affiliated to the same organisation. This grouping was based on the assumption (later shown to be true) that communication activities and interaction amongst similar businesses in such groupings are more likely to occur. While most of micro-entrepreneurs own one mobile phone, some own two or three. Most of participants use a low-end type of mobile phone. Only a few participants own mid-end device. The price of mobiles in Indonesia are relatively affordable, the cheapest being around USD10 for non-branded, locked-to-a-network device. The cost of phone calls are not as cheap but there are many services offered by cellular provider that are very helpful in saving for the cost of calls and messaging particularly for customers with the same provider.

There were existing business organisations such as business associations and co-operatives where participants reside and operate. Most micro-entrepreneurs found that these organisations were not very useful and preferred to discuss business matters within their own self-formed networks. Networking among enterprises was mostly based on ethnicity, kinship, friendship, or in some cases, religious grounds. Relationships between businesses were informal and based on mutual benefit. Micro-entrepreneurs shared work, information and resources within the network as well as communicating other business matters.

Participants are facing similar challenges as those faced by micro-enterprises in general -- such as difficulties in getting capital, marketing difficulties, lack of raw material, and lack of government assistance. There are also some personal limitations that may affect how micro-entrepreneurs conduct business. How mobile phones may overcome the limitations and other business constraints will also be discussed in the next section. It is interesting to discover that many participants are not aware of or are having difficulties in getting assistance there are assistance programs offered by the Indonesian government.

Micro-entrepreneurs use many mobiles features and services to conduct business activities. Most participants prefer to call than SMS for business dealings and communication with suppliers. Other activities which require contacting many customers, like promotion and marketing, are done by means of SMS, although there are some participants who use Internet marketing such as blogs or Facebook. Disabled micro-entrepreneurs rely on calls for arranging transportation, but also use alarms features and additional application in arranging activities.

5 BUSINESS AS LIVELIHOOD

This section and the next will outline the empirical findings of this study. This section will outline the details of micro-entrepreneurs' business as the source of livelihood and the next section will elaborate on mobile use for business.

In general, livelihood is the main element of micro-entrepreneurs' well-being. For micro-entrepreneurs, the source of livelihood is their businesses. Therefore being able to conduct business activities and develop business networks and strategies are imperative. Participants in this study regard family as very important. Participants do not regard well-being as their own but rather their family well-being. Family livelihood is seen as one of the most important goals. Many interviewees believe they are materially sufficient if they could earn enough for the family. Some even regard this as the only goal in their life, not wanting anything else.

I think I'll have enough when I can pay for our daily needs (Yedi).

The main income of micro-entrepreneurs is from the business itself. Some participants earn extra income from part-time jobs or their spouse's salary but the main source of livelihood is the business. Therefore, it is imperative to keep the business running and developing.

The constraints on business growth are universal, and growth is gradual, but more successful micro-enterprises do emerge. Having a bigger and more successful business is the professed objective of many participants. Micro-entrepreneurs strive for business growth and/or diversification. Having more customers, increased sales, getting more orders, having a bigger place, modern equipment, and more employees are what the participants mentioned, when asked about the future of their businesses.

Businesses like massaging depend heavily on the number of customers. For some businesses, this can be very uncertain. They can be very busy in one day and yet some days could go by without a single client. Therefore, having another business to support this irregularity seems to be a good alternative. Owning the place of business is another way of dealing with a business' irregular income. Many of the masseurs rent their places so paying rent every month is a fixed expense that they must bear. Many are saving to get their own place, but having a strategic business place in a big city like Bandung or Makassar can be very costly. Others would like to apply a better management and computerised system to boost sales, while others want to have their own business place.

6 MOBILE PHONES AND MICRO-ENTERPRISES

The previous section showed fulfilling family daily needs is very important and that business is the main source of livelihood for participants and their families. To understand how mobile phones impact on micro-entrepreneurs' livelihoods, it is important to explore how micro-entrepreneurs utilise mobile phones for business and family life. The mobile phone is used for various business purposes, and more importantly, has become the primary business contact for many micro-enterprises. The objective of this section is to discuss the business dynamics of micro-enterprises and how mobile phones have impacted on actual business processes. The findings presented in this paper reveal that there are many areas in which mobile phones have facilitated daily business activities. The analysis also highlights the significance of mobile use in building trust, business networking and to overcome constraints and limitation faced by many micro-entrepreneurs.

Micro-entrepreneurs utilise the mobile phone for different business purposes depending on the nature of the business as well as personal circumstances. The significance of mobile phones in facilitating customer communications are great for businesses which offered services and customised products and using mobile phones to facilitate delivery is very useful for those who make bulky products. The use of mobile phones for marketing and promotion is imperative for all participants but it is even more so for those who do not have a business place such as the retail ladies. These businesses rely heavily on conveying information on new products to customers for sales. Personal choices and circumstances such as household responsibility, religious adherence, and physical limitations also influence how micro-entrepreneurs use mobile phones in business. The mobile's role in ordering supplies, while very helpful for all participants is a life changer for women participants who are bound to stay at home because of parenting responsibility and/or religious restrictions. Similarly, the blind participants benefited tremendously by the capacity of physical mobility enabled by mobile phones. There are no significant differences on the use of mobile phones for business between the research locations.

6.1 Mobile phones and micro-enterprise networks

Facilitating communication with other businesses is one of the many use of mobile phones for business. As outlined previously, micro-enterprises preferred to communicate and collaborate with their self-formed networks based on kinship and/or friendship. Networking is organic and unstructured, thus the origin and flow of information is irregular. The mobile phone facilitated communication between businesses within these networks and is seen as the most efficient way of discussing business

matters and plans. The nature of business communication in each participant group is diverse. Businesses communicate with each other to share workload, discuss business problems, set collective fees, borrow material, share information or simply help others. These interactions are greatly facilitated by mobile phones, as this shirt-maker said:

I talk to other businesses here mostly over mobile phone, to exchange ideas or discuss matters about our business (Iwan).

Businesses often share workload when they do not have enough workers or time to finish an order. This is also the case when businesses do not have the necessary resources to fulfil an order. Again the mobile phone has been used to aid communication in this process. Others would share a whole job if it means that they could get more orders. Mobiles are also used when an enterprises need to borrow materials from their neighbouring businesses or getting an advice about business skills.

Setting a collective price is important for many of these enterprises to avoid unhealthy competition and to maintain a reasonable price for a product or service. This has been greatly facilitated by mobile phones. Consensus among the business owners needs to be reached before setting a collective fee. In the case of blind masseur participants, the networks among the businesses are very informal and are mostly based on friendships. Before mobile phones, these discussions would be in the form of meeting physically. These meetings were mostly unstructured and initiated coincidentally such as when meeting friends in their former blind school. Thus, agreement was usually made between a small number of friends and acquaintances as stated by participants. With mobile phones, the discussions could reach a larger group of people. Sometimes, this discussion could extend to other cities, as micro-entrepreneurs' networks also include friends or acquaintances from other places.

6.2 Mobile phones enhance business activities

Mobile phones have facilitated many aspects of business activities. Micro-entrepreneurs have described different ways in which mobile phones have significantly changed many aspects of their business. These changes include enhancement of daily business activities such as sales and customer relations, ordering supplies, and providing service for customers.

I used my phone to order merchandise from suppliers, communicate with customers, contact my tailor, SMS banking, to check the mail box in the boutique's blog, take a picture. It's very useful (Ani).

Mobile phones are being used as the primary form of business contact especially for businesses without landlines. Communication with workers in workshops and production sites is also enhanced by mobile phones. Another added value of mobiles is in the area of delivery of orders. They serve as a 'GPS' in often-disordered streets, alleys and addresses. Mobiles have become such an integral part of their business that some micro-entrepreneurs believe their business might not have not been able to develop the way it has without mobiles.

Mobile phones have been instrumental for sales and maintaining customers. All participants agree that they get more customers since they use mobile phones. Mobile phones enable them to be more accessible to customers. The potential of getting new customers have increased because existing customers often recommend their business to friends and acquaintances by sharing their mobile number. For some, being contactable anytime and anywhere has made it possible for them to seamlessly operate their business, such as arranging effective schedules and managing cancellations. The mobile have become their 'office' which have enabled them to maintain good services for customers. For others, the contactability has introduced them to a broader customer base because a mobile phone number as a point of contact can be passed around the networks of existing customers.

The ease and flexibility of getting orders from customers is another important aspect of mobile phones. Many businesses need to approach customers to make a sale. Without mobile phones this has to be done by visiting existing or potential customers which may well be time consuming and incur a lot of costs. With mobile phones, businesses can chase orders easily then arrange for payment and delivery.

The use of mobile phones has provided advantages for businesses that are looking for online markets or a broader customer base. The ability of mobile phones to access the Internet have allowed businesses to easily run online portals such as blogs or to interact with customers through chatting and messenger facilities, as mentioned by a boutique owner in Makassar. Businesses which perform post-service consultations such as health clinics have also benefited from the use of mobile phones. Using a mobile, evaluations of patients after treatment can be done efficiently and in a private manner.

While most of the above mentioned contributions are due to the communication efficiency of mobile phone, there are other uses. A notable example would be the role of mobiles in business data storage. Several participants have described how they also use the device to maintain some business data such as to keep track of customer orders, remainder for stocks availability and most importantly as a written proof of transactions as well as repudiation. The main advantage of this innovative use as conveyed by a participant is the ability to access these records anytime, anywhere which is such a convenience to business dealings.

6.3 Capital, trust and mobiles

For financial resources, most enterprises tend to rely on their personal savings or loans from family and friends. They do not rely on financial institutions such as banks because of high interest and mortgage requirements. Co-operatives are not a choice either, because they also charge high interest and often do not offer other supports such as providing useful information. Participants are reluctant to borrow money from a bank because of the mortgage requirements, high interest, and other administrative requirements or simply do not like to owe money. Therefore, micro-entrepreneurs employed several strategies to minimise or avoid loans. Business strategies such as asking for cash advances for customer orders or back-pay arrangements with the supplier have been used to avoid loans.

For such aforementioned arrangements to work there must be a considerable level of trust amongst these micro-entrepreneurs and their networks. Trust-based transactions among local buyers and sellers, and among different enterprises, are the key factor within many industrial networks and districts (Turner 2003). Mobile phones may support the building of this trust as the contactability provided by mobile phones gives better assurance to customers and suppliers. However, trust in information exchange over the phone seems to be valid only between those parties who already have a close relationship. In our participant's case, such interactions are for the *langganan* (frequent or long-time customers/suppliers) only. A word of caution was conveyed by a participant when dealing with newly-acquainted parties over the mobile phone, saying that:

But these days you have to be careful when using mobiles because there are those who'd use them fraudulently. Once someone called to place a big order and I've prepared it for her. When asked about the payment, she said that it has been transferred. Luckily I can check my account with SMS banking so I knew that she lied (Jun).

6.4 Running businesses with certain constraints and limitations

Participants face challenges in running business due to various constraints, e.g., lack of assistance, lack of capital, marketing difficulties and difficulties in acquiring raw material. Mobile phones provided ways around these constraints for many. Earlier sections have described how mobile phones were used to improve marketing strategies and ordering supplies including raw materials. Lack of capital is compensated for by deploying various strategies. Mobile phones facilitated communication and trust-building for micro-entrepreneurs to perform these strategies.

While the constraints mentioned were external, micro-entrepreneurs also have to deal with various personal limitations and responsibilities. For many these limitations are personal choice, while for others they are not. There are blind masseurs who are limited by physical ability, women micro-entrepreneurs who also have household responsibilities and those religious women micro-

entrepreneurs who need to adhere to religious restrictions. Some women are bound by both religious restrictions and the responsibility to take care of children.

Some micro-entrepreneurs, are very religious and that religious adherence is of the most importance to them. In an effort to adhere to religious conducts, these micro-entrepreneurs are faced with several restrictions such as obligation to maintain hijab (covering for Muslim women) and avoiding *ikhtilath* (the mixing of men and women in one place). They introduce dilemmas in running business that require a creative approach. The mobile phone is considered very helpful in providing ways around these restrictions. The convenience of ordering supplies through mobile phones is not only saving time and cost but most importantly it avoids face-to face meeting. Mobile phones have facilitated marketing for a business that requires extensive communication to market services to companies such as health clinics, despite not having male representatives. Similarly, mobile phone can be used to avoid *ikhtilath* by sending SMS rather than calling the supplier who happen to be a male.

Another constraint conveyed by participants is running a business and household together. Female participants in this study choose to run home-based businesses so that they can also look after their children. There are various reasons as to why these women choose to establish their own businesses. Many are trying to find additional income for their family, some want to express their creativity, whereas others are merely putting their spare time to good use. Mobile phones have played an important role in combining business and household matters, as well as parenting children. Being able to communicate seamlessly with customers and employees has enabled interviewees to stay at home while conducting business activities.

Mobile phones have also assisted those micro-entrepreneurs with disability such as the blind masseurs in conducting their business. Their business often involves travelling to clients' destinations. For them to be able to move easily from one place to another, these micro-entrepreneurs require a flexible and reliable mode of transportation. Many of the blind masseurs have family or relatives that they can rely on to take them to places. Supports may not be available all the time. As it is an unpaid service, many of them feel reluctant to ask for help. They do not tend to ask family or relatives for help if it is a business matter. Being in the urban areas where traffic is always a problem, the most appropriate transportation is the motorcycle. Therefore, many blind masseurs would use an *ojek* (motorbike taxi) service for travelling for house visits.

Another very important use of mobile phone for me is so that I can call my ojek to come and pick me up when I'm going for a house visits or when I've finished with a client (Syam).

These *ojek* drivers are contactable as they also use mobile phones for their business. Using mobile phones, blind masseurs would have the means of contacting these drivers, therefore creating a support system for their business activities, without relying too much on family and/or relatives.

7 DISCUSSIONS

The above findings described how mobile phones have facilitated the operation of micro-entrepreneurs' enterprises, including conducting daily business activities, building trust, facilitating communication with other businesses, and providing ways around various limitations and responsibilities (Figure 2). How the mobile phone is utilised varies between individuals, in a contextual and contingent way. The varying size of the ovals depicted this variation. While a furniture maker (for example) uses the mobile more to consult with customers, a blind masseur uses it more for arranging transportation. Although mobiles are used for both consulting with customers and arranging transportation, it is used in line with the main business characteristics.

The mobile helps micro-entrepreneurs to conduct their daily business activities. Mobile phones are used for sales, maintaining customer relations, ordering supplies, marketing and product delivery. Participants have also said that their business network expands with the use of mobile phones. They get a broader range of customers based on existing customers' recommendations and the ability to connect to on-line markets. The ease of searching for or getting information provided by mobile

phones has introduced them to a wider network of suppliers and distributors. Mobile phones helped micro-entrepreneurs in devising a solution to common business constraints such as acquiring raw material, getting capital, and improving marketing strategies. Participants also recognise the value of mobile phones in providing ways around personal limitations and to juggle business with other responsibilities. Participants have described how mobiles have helped them to balance business and household responsibilities or manage business despite religious restrictions, whereas those with disabilities have found that mobiles provide support for their physical mobility.



Figure 2. Micro-entrepreneur mobile use for business

Mapping the findings to the CA will illustrate how the mobile phone as a good or commodity create new and expand existing *capabilities* of micro-entrepreneurs in running business and improving their livelihoods.

As discussed previously the CA posits that the appropriate space for many evaluative exercises which include human well-being and development is of capability to achieve valuable *functionings* instead of utility (happiness and desire) or that of resources (income and entitlements). ‘The identification of objects of value specifies what may be called an evaluative space’ (Sen 1985, p. 272). Evaluative space is related to *functionings* and capability to function (ibid p. 273). The present study has identified that one of the most important elements of well-being as perceived by the micro-entrepreneur participants is family livelihood. In the CA terms this is one of participants’ ‘valued objects’. Thus rather than examining whether the use of mobile phones leads to more income, this study put emphasis on micro-entrepreneurs capability if fulfilling their livelihood.

In the CA’s terms the focus of our discussion is on the use of mobiles as achieved *functionings*, rather than just the capability as potential *functionings* within a capability set, which are far too diverse to consider. ‘Moving from *functioning* to capability complicates the exercise drastically as additional information is required on counterfactual choices (which cannot be observed) as well as actual choices’ (Clark 2002, p. 36). There are possibly countless *functionings* that can be created or enhanced using mobile phones which are manifested in a person’s capability or his freedom to achieve his objective. It is most likely that a person will not use all the available *functionings*, but that he will choose only those *functionings* that serve his needs and preference as determined by the personal, collective, and social contexts at a given moment.

Although mobile use is discussed as an achieved *functioning* rather than a capability, it is not difficult to see that participants have more or better *functionings* within their *capabilities* as the result of using mobile phones. Blind masseurs, for example, with the use of mobiles now have the *functioning* of ‘arranging own transportation,’ whereas before the mobile, they had to rely on others to arrange transportation. Boutique owners now have the *functioning* of ‘mobile and online advertising’ which is

a new *functioning* created with the use of mobiles. Similarly, the retail ladies had to literally go door-to-door to offer their goods, whereas now they only need to call and (ideally) the customers will come.

If the use of mobile phones can create more or improve existing *functionings* then it can be said that the capability set of a person is expanded. The following table (Table 2) illustrates how micro-entrepreneurs' capability in fulfilling livelihood expanded with the use of mobile phones.

Without mobile phone	With mobile phone
Physical independence: had to rely on others	Physical independence: arranging own transportation
Marketing: 'Word of mouth', static banner/boards advertising	Marketing: faster mobile based 'word of mouth', online and SMS advertising
Business monitoring: had to be in the workshop	Business monitoring: monitor workshop from anywhere
Business and household: difficult	Business and household: easier
Getting supplies/orders: need to visit supplier/seller	Getting supplies/orders: call or SMS, more efficient, saving time and cost

Table 2. Newly created and enhanced *functionings* with the use of mobile phone

8 CONCLUSION

This paper has established that mobile phones support more than just income and productivity but the real capability of micro-entrepreneurs in conducting business using the CA. CA posits that the appropriate space for many evaluative exercises which include human well-being and development of capability to achieve valuable *functionings* instead of utility (happiness and desire) or that of resources (income and entitlements) and that evaluative space is related to *functionings* and capability to function. The present study has identified that providing daily needs for family participants' 'valued objects'.

The mobile phone has made a contribution to the extent that it can help a person to achieve valuable objectives. The paper focuses on how mobile phones are used to facilitate *functionings* to these valuable objectives. The findings demonstrate how the mobile phone contributed to the value of *capabilities* overall by means of achieving a specific capability. In this case the capability of being able to provide family is achieved by using the mobile phone to enhance business activities, maintaining and expanding business networks, building trusts as well as running business despite various constraints and limitations.

This article is in line with and extends the cited studies on CA and ICTs by suggesting that mobile phones enhance human *capabilities*. We add to existing knowledge by concluding that CA relates to the technological domain in the sense that technology should not be viewed only as an artefact, but as a commodity and human resource that helps individuals and groups to achieve their valued *capabilities*. The study adds to the description of the diverse ways of achieving possible *functionings* – by expanding the parameters of the *capabilities* for micro-entrepreneurs in conducting business while taking into account business ethics within micro-entrepreneurs communities and various limitations that may impede business development.

References

- Abraham, R. (2006). Mobile phones and economic development: evidence from fishing industry in India. Paper presented at the International Conference on Information and communication Technology for Development, Berkeley, California.

- Alampay, E. A. (2006). "Beyond access to ICTs: measuring *capabilities* in the information society." *International Journal of Education and Development Using Information and Communications Technology*. 2(3): 4-22.
- Alkire, S. (2002). "Dimensions of Human Development." *World Development*. 30(2): 181-205.
- Avgerou, C. (2008). *Information Systems in Developing Countries: a Critical Research Review*. Department of Management LSE, Working Paper Series. Basingstoke: Palgrave Macmillan (165).
- Boateng, R. (2011). Mobile phones and micro-trading activities—conceptualizing the link. *info*. 13(5): 48-62.
- Chew, H. E., Ilavarasan, P. V., and Levy, M. R. (2013). When there's a will, there might be a way: the economic impact of mobile phones and entrepreneurial motivation on female-owned microenterprises. Paper presented at the Proceedings of the Sixth International Conference on Information and Communication Technologies and Development: Full Papers - Volume 1, Cape Town, South Africa.
- Clark, D. A. (2002). *Visions of development*. Massachusetts, USA: Edward Elgar.
- Donner, J. (2006b). The use of mobile phones by microentrepreneurs in Kigali, Rwanda: Changes to social and business networks. *Information Technologies and International Development*, 3(2), pp. 3-19.
- Donner, J. (2007). The rules of beeping: exchanging messages via intentional “missed calls” on mobile phones. *Journal of Computer-Mediated Communication*, 13(1), 1-22.
- Donner, J. and Escobari, M. (2010). A review of evidence on mobile use by micro and small enterprises in developing countries. *Journal of International Development*. 22(5): 641-658.
- Esselaar S, Stork C, Ndiwalana A, Deen-Swarra M. 2007. ICT usage and its impact on profitability of SMEs in 13 African countries. *Information Technologies and International Development* 4(1): 87–100.
- Frempong, G. (2009). Mobile telephone opportunities: the case of micro-and small enterprises in Ghana. *Info - The journal of policy, regulation and strategy for telecommunications* 11 (2):79-94.
- Gigler, B. (2011) "'Informational *Capabilities*' - The Missing Link for the Impact of ICT on development." World Bank ICT Sector Week. E-Transformation Working Paper Series: World Bank Working Paper Series.
- Gasper, D. (1997). "Sen's Capability Approach and Nussbaum's *capabilities* ethics." *Journal of International Development*. 9(2): 281-302.
- Glaser, B. G. (1978). *Theoretical sensitivity: Advances in the methodology of grounded theory*. California: Sociology Press.
- Glaser, G. B., Strauss, A.L. (1967). *The Discovery of Grounded Theory: Strategies for qualitative research*. Chicago: Aldine Publishing Company.
- Hamel, J. (2010), ICT4D and the Human Development and Capability Approach: The Potentials of Information and Communication Technology, Human Development Research Paper 37.
- Heeks, R., Molla, A. (2009) *Impact Assessment of ICT-for-Development Projects: A Compendium of Approaches*. Development Informatics working paper series. 36.
- ITU (2012). *ICT Data and Statistics*. International Telecommunications Union. Retrieved 26 July 2012 from <http://www.int/ITU-D/ict/statistics/material/excel/Mobile-cellular2000-2011.xls>.
- Jagun, A., Heeks, R. and Whalley, J. (2008). The Impact of Mobile Telephony on Developing Country Micro-Enterprise: A Nigerian Case Study. *Information Technology and International Development*, 4(4), 47-65.
- Johnstone, J. (2005) *Knowledge, development and technology: Internet use among voluntary sector: AIDS organizations in KwaZulu-Natal*. London: Department of Information Systems, London School of Economics and Political Science <http://csrc.lse.ac.uk/research/theses/johnstone.pdf>.
- Kamga, O. (2006). *Mobile phone in Cote d'Ivoire: Uses and self-fulfillment*. Paper presented at the International Conference on Information and Communication Technologies and Development, Berkeley, CA.
- Katsina, M. and Abdulkareem, A. (2012). Use of Mobile Phones among Informal Microenterprises in Katsina, Nigeria. *International Journal of Information Technology and Computer Science*, 4(July-August).

- Kleine, D. (2009). The ideology behind the technology – Chilean micro-entrepreneurs and public ICT policies. *Geoforum*. 40: 171-183.
- Mbogo, M. (2010). The Impact of Mobile Payments on the Success and Growth of Micro-Business: The Case of M-Pesa in Kenya. *The Journal of Language, Technology and Entrepreneurship in Africa*. 2(1): 182-203.
- Molony, T. (2008). The role of mobile phones in Tanzania's informal construction sector: The case of Dar es Salaam. *Urban Forum* 19(2), 175-186.
- Nielsen Company (2011). Mobile phone penetration in Indonesia triples in five years. Retrieved 18 July 2012 from <http://blog.nielsen.com/nielsenwire/global/mobile-phone-penetration-in-indonesia-triples-in-five-years/>.
- Nussbaum, M. (2006). *Capabilities as fundamental entitlement. Capabilities equality: basic issues and problems*. Kaufman. New York, Routledge: 44-70.
- Patton, M. Q. (2002). *Qualitative Research and Evaluation Methods*. London: Sage Publication.
- Robeyns, I. (2005). The Capability Approach: A Theoretical Survey. *The Journal of Human Development*. 6(1): 93-114.
- Samuel, J., Shah, N. and Hadingham, W. (2005). Mobile communications in South Africa, Tanzania and Egypt: results from community and business surveys. *Vodafone Policy Paper Series, 3 Africa: the impact of mobile phones*. London: Vodafone. Retrieved 24 April 2009 from http://www.vodafone.com/content/dam/vodafone/about/public_policy/policy_papers/public_policy_series_2.pdf
- Sahay, S. and Avgerou, C. (2002). Introducing the Special Issue on Information and Communication Technologies in Developing Countries. *The Information Society*. 18(2): 73 - 76.
- Sein, M. K. and G. Harindranath (2004). Conceptualizing the ICT Artifact: Toward Understanding the Role of ICT in National Development. *The Information Society*. 20(1): 15 - 24.
- Sen, A. (1985). *Commodities and Capabilities*. Delhi: Oxford University Press.
- Sen, A. (1993). Capability and Well-Being. In Nussbaum and Sen (Eds.), *The Quality of Life*. Oxford: Clarendon Press.
- Sen, A. (1999). *Development as Freedom*. New York, Oxford University Press.
- Smith, M.L., Rasyid, A.T., Spence, R. (2011). "Mobile Phones and Expanding Human *Capabilities*". *Mobile Telephony Special Issue*. 7(3): 77-88.
- Toboso (2011). Rethinking disability in Amartya Sen's approach: ICT and equality of opportunity, *Ethics of Information Technology*. 13:107-118.
- Urquhart, C. (2012). Grounded Theory in ICT4D: A Missed Opportunity? Retrieved 21 July 2013 from <http://www.cdi.manchester.ac.uk/newsandevents/GTMinICT4DUrquhartseminar.pptx>.
- World Bank (2013). *World Development Indicators*. Retrieved 18 June 2014 from data.worldbank.org/indicator/NY.GDP.PCAP.CD.
- Zheng, Y. (2007). Exploring the Value of the Capability Approach for E-Development. *Proceedings of the 9th International Conference on Social Implications of Computers in Developing Countries, São Paulo, Brazil*.