

Exploring the Dimensions of Digital Inequality: The Case of Women Traders in Accra

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Abstract: *The prevalence of mobile phones has led to a number of studies to assess their impact and role in the urban informal economy. However, one area that remains under-researched is the differences in access and use – digital inequality among semi-literate users, particularly in the informal economy. Drawing on qualitative data from interviews of market women in four major markets in Accra — Makola, Agboghloshie, Kaneshie and Madina markets — this paper goes beyond mere access to examine the acquisition of technological know-how and its association with mobile phone features and services assessed as a way of measuring inequality among women traders. From the study findings, the paper argues that women traders have limited technical know-how which has hindered them to explore beyond the voice function the other myriads opportunities their mobile phones have to offer. Their limited knowledge stems from lack of various literacies: lack of technical literacy, basic language literacy, and information literacy which is associated with their educational level and age. This paper thus questions the implication of education in developing technological savvy among semi-literate women traders in the urban informal economy to exploit the myriad opportunities their mobile phones have to offer. This research paper contributes to the building of grounded empirical knowledge of Information and Communication Technologies (ICTs) for development, the role of social networks in ICTs use, knowledge transfer to adult population and dimensions of digital inequality among women traders in the informal economy of Accra.*

Keywords: *digital inequality, women traders, markets, mobile phone.*

INTRODUCTION

Technology that was formerly restricted to urban male elite (Kamaga, 2006), the mobile phone has become widespread and is now available to the rich and the poor, the literate and the illiterate, and men and women. Although mobile phones have become prevalent and accessible to all groups and social classes, there are interrelationships between what the technology is and how people choose to use it (Donner, 2008). For this reason, there are differences in mobile phone access and use, and this is referred to as digital inequality (DiMaggio & Hargittai, 2001). A number of studies on digital inequality – such as those by Warschauer (2003) and Stiakakis et al. (2010) – which have focused on internet penetration and access by means of the use of computers as a way to measure the digital inequality. Not much has been done in the area of digital inequality

particularly among women enterprises in the informal economy. This paper takes a new dimension of assessing digital inequality and places specific emphasis on mobile phones. It focuses on the five patterns of digital inequality identified by DiMaggio and Hargittai (2001) and explores the differences in access to and use of mobile phones among women traders in Accra. The paper focuses on how women traders acquire the technical knowledge to use their mobile phones and what features and services they are able to explore on their mobile phones as a way to measure any differences if it exists.

To situate the paper in its context it is important to clearly explain digital divide and digital inequality as there are many interpretations in the literature about the concepts. Wilson (2006:300) argues that digital divide is “an inequality in access, distribution, and use of information and communication technologies between two or more populations”. The digital divide is just the split between the haves and have-nots of new media technology (Hargittai, 2004). The dichotomous view of the ‘digital divide’ as a distinction between people who do and do not have Internet access was natural and appropriate at the beginning of the diffusion process. It is also argued that as access diffuses to parts of the public who were initially excluded, dimensions related to the quality of use become important bases by which the benefits of mobile phones and associated ICTs can be stratified. In this context, disparities in digital technologies now go beyond material or physical access to differences in use of mobile phones and associated ICTs owned (DiMaggio & Hargittai, 2001).

There is, therefore, a need to refine the understanding of the term digital divide to consider the quality of use of a technology. DiMaggio and Hargittai (2001) suggested the term “digital inequality” and argue that the term is used to explore the historical patterns of social stratification that result in the unequal access to and use of mobile phones and associated ICTs. Digital inequality was suggested because differences and exclusions with respect to digital technologies are not simply a matter of material access. This is because inequality in access has declined, in the sense that mobile phones have become widespread and part of everyday lives of most people. Differences in terms of quality of use have therefore become an important basis on which the technology tends to stratify society. In other words, quality of use should be the focus in assessing inequality, not just physical access to or quantity of mobile handsets.

This suggests that even though the prevalence of mobile phone (i.e. material access) appears to be bridging the divide, differences in classes of people will tend to create inequalities as the quality of use becomes important to stratify users. In this context, differences in access and quality of use of mobile phones, namely, digital inequality, become the important basis to measure any differences among users. Following DiMaggio and Hargittai’s conceptualisation which the researcher tends to agree with is used in assessing differences in the use of mobile phones among women traders in Accra.

Ghanaian market women have not been left out of the digital revolution. They have joined the mobile phone age by integrating mobile phones into their micro trading activities. How did these women perceive to be illiterate or semi-literate acquire technological know-how to use their mobile phones; what kind of mobile features do they access and how does the use of mobile phone among these women differ? This

paper explores these questions by focusing on wholesale and retail women traders in Accra.

THEORETICAL PERSPECTIVE - DIGITAL INEQUALITY

DiMaggio and Hargittai (2001) argue that digital inequality encompasses five dimensions to measure the access and differences in quality of use of mobile phones and associated ICTs. These dimensions include technical means or variation (a type of mobile phone network owned), the autonomy of use, digital literacy and skills relating to education and age, the social support or assistance received and dimension of purpose in use.

The first dimension, technical inequality is the disparity associated with technical aspects that gives the user the opportunity to access a wide range of mobile services due to the advancement in mobile phone networks over the years. In light of this, the type of mobile phone networks that a user has access to determines the type of applications and services that can be used. For instance, a mobile phone user with first generation (1G) mobile phone will benefit only from voice calls whereas a user with 3G will enjoy further benefits such as video calls, internet access, and so on. In other words, the use of less sophisticated mobile services such as 1G reduces the benefits one gain from mobile phones.

The second dimension is the degree of autonomy of use - the freedom to use technology for one's preferred activities and space. DiMaggio and Hargittai (2001) and Kvasny (2002) argue that while autonomy of use is related to technical means in terms of what a user enjoys when using the technology like a mobile phone, it also represents digital inequalities. This is because the benefit attained from the possession of a technology such as mobile phones is closely related to the user's ability to experiment and explore the technology effectively. It, therefore, becomes clear that a lack of higher educational attainment can restrict the use of the technology. Those with higher educational achievements will benefit more by accessing mobile phone applications such as the internet and will be able to browse for information; store and process data; unlike someone with a low educational attainment because such applications involve digital and information literacy among other skills.

The third dimension - inequality in skills (the know-how of using technology effectively in finding information, storing data and so on) is significant in measuring disparities among mobile phone users. Inequality in skills – which is associated with educational differences - plays a significant role (DiMaggio & Hargittai, 2001). Stiakakis et al. (2010) argue that undeniably English (for example, in countries like Ghana) is the language of the internet. This suggests that the higher the level of one's education, the higher the possibility one is able to explore a technology. In this third dimension, age is also said to play a role as a factor that determines the use of mobile phones and associated ICTs (Meso et al., 2005).

The fourth dimension, social support is of three kinds: formal technical assistance from persons employed to provide it; technical assistance from friends and family members to

whom the user can turn to whenever problems are encountered; and emotional reinforcement from friends, family in the form of commiseration when things go wrong and or positive interest in sharing discoveries when things go right. Social support increases the motivation to use the technology and the extent to which a user could develop his/her own digital competence (DiMaggio & Hargittai, 2001). Due to this, users of mobile phones and associated ICTs who need support will rely on their social networks and people who possess higher education and digital literacy for assistance. Social networks, therefore, becomes paramount for such users to develop their own digital competence and enjoy the benefits of their mobile phones.

The last dimension of digital inequality mentioned by DiMaggio and Hargittai (2001) is the purpose for which one uses technology. With regard to the dimension of purpose of use, more knowledge or skills are required by the user if the purpose of use is very high. This suggests the effective use and exploration of mobile phone owned require digital literacy.

WOMEN, MARKET TRADE AND MOBILE PHONES IN GHANA

Mobile phones have been cited as the fastest growing ICT sub-sector and therefore have become pervasive. They are accessible to all including the informal economy where the urban poor predominate. Mobile phones have therefore become an integral ingredient in economic activities. They appear to be an essential feature of the routines of informal economic activities, particularly among owners of sole proprietor businesses which form part of micro and small enterprises (MSEs) (Boateng, et al., 2014; Chew et al., 2015; Komunte, 2015; Gichuki, et al., 2018). The integration of mobile phone in economic activities has not excluded MSEs in Ghana (Frempong, 2009; Boateng, 2010; Boateng, 2011; Kwakwa, 2012). Donner & Escobari (2009) and Tetteh & Frempong (2009) also note that most MSEs in developing countries consist of sole proprietorships (one person working alone) that yield low profits and struggle to survive. This is evident in Ghana as sole proprietorship is the most common form of MSEs. Sole proprietorships serve as a job avenue for many self-employed women in Ghana. Sole proprietorship for most women in Ghana lies mainly in non-farming enterprises (Boohene et al, 2008) with women operating 72% of these enterprises. Almost half of these sole-proprietor enterprises (49%) involve trading, with about 41% of female traders operating in urban centres (Ghana Statistical Service, 2008). Trade forms the largest sector of non-agricultural activities (46%) accounting for almost half of Ghana's working population and more than half of the female working population (53%) (Budlender, 2011). In Ghana's urban areas, market trade constituted the major source of employment for the majority of women (Dunne & King, 2003) with about 78 percent involvement. Women predominate in Ghanaian markets and particularly in the sale of foodstuffs, vegetables, clothes and textiles. Traders are categorised according to the kind of product they trade in. In this regard markets are divided into submarket sections. A common feature of all Ghanaian markets is the congestion with people and traffic jams and densely populated with traders and hawkers. Hawkers and traders line up in all open spaces and streets surrounding the market. Traders particularly retailers display or sell their goods on the ground or on tables and in surrounding sheds which have no formal tenure.

In Ghana, each region has its major markets. Greater Accra has about forty markets – Odorna, Agboghloshie, Mallam, Kaneshie, Makola, Mallam Atta, and Madina, among others – but Agboghloshie, Kaneshie, Madina and Makola are the four well-known major markets.

Makola Market

Makola market (also known as Makola number One or the 31st December Markets) was market built in 1924 to replace the Salaga market (Robertson, 1983). It is located in the central business district of Accra and it is bordered on the South-East by old Accra; James town and Ussher town. It is one of the most well-known markets in Greater Accra region and it is highly chaotic and congested, characterized by traffic jams and street hawking. Traders can be seen selling on the ground or on tables and in surrounding sheds which have no formal tenure. It is the predominant market for wholesale and retail trade in both locally and manufactured goods and all types of goods or commodity can be purchased from the market, ranging from foodstuff, vegetables, household items, etc. but the predominant commodity sold is textiles. In the textile section of the market, there are women who are involved in the sewing of these clothes (textiles) based upon the request of customers.

Agboghloshie Market

In the early 1990s, the Makola market was engulfed by fire, leading to Makola to be divided into two parts, Makola number one and Makola number two¹. The resulting relocation of traders from Makola market in the 1990s resulted in the development of Agboghloshie market. Most of the previous traders of Makola could not go back after the reconstruction because the new stalls built at Makola market were bigger and more expensive and they could not afford to purchase or rent them (Inside watch Africa, 2012). Agboghloshie has since become one of the major markets in Accra. It is predominantly a wholesale market and traders sell their goods either through wholesale or retail. All types of commodities can be purchased in this market. However, the most visible commodity traded in is vegetables. In this market, women traders predominate in the sale of vegetables, except for onions which are mainly the business of men (who are predominantly from Niger and Mali). The market is also characterised by high congestion of traffic jams.

Madina Market

The Madina market was developed by the Ga District Assembly with support from international donors within the framework of the government's village market development strategy (Lyons & Snoxell, 2005). The main buildings of the market surround a forecourt for parking and access, a rear court and a courtyard with two floors of concrete-frame and block-built shops. The courtyard contains roofed open trading shelters. The rear courtyard and forecourt house self-provisioning hawkers or traders selling on tables. These are self-provisioned and have no formal tenure status. Also,

¹This market is located adjacent to Agboghloshie market.

there are some self-provisioned stalls, shops and hawkers that are densely lined up on all streets surrounding the market and on open spaces in the area which have no legal tenure. The goods traded in this market are foodstuffs, vegetables, textiles and mobile phones. Men predominate in the sale of meat and mobile phones in this market.

Kaneshie Market

Kaneshie, a suburb of Accra, is located just outside the main city centre on a major highway. The name 'Kaneshie', a Ga word, literally means 'under the lamp' marking its beginning as a night market (Dakubu, 1997). This market is unique among all the markets in Accra because it is referred to as a complex and it is made of three floors. Although foodstuff and vegetables are the predominant goods sold in this market, all types of goods can be purchased. However, on each floor, a particular commodity predominates. The ground floor is where foodstuffs, fish and vegetables are mainly sold. On this same floor is a section where meat is sold and this is predominantly sold by men. Household items are mainly sold on the first floor. The second floor is where provisions (such as cereals, milo, teabags, sugar, canned fish/meat, biscuits, spaghetti/pasta etc.) are traded and the last floor is where textiles are traded, as well as sewing of clothes done. Kaneshie market is predominantly a retail market.

METHODOLOGICAL APPROACH

This paper from a broader study (Ussher, 2015) is a multi-sited² case study that includes four major markets – Makola, Agbobbloshie, Kaneshie and Madina markets – in Accra. The selection of the four markets in Accra was to assess markets in different locations, in the central business district of Accra and a bit off the outskirts of the city, in order to ascertain whether any similarities and differences (if it exists) in the use of mobile phones in different market context.

Although women traders constitute a predefined social group in Ghana, there is no existence of a list or register of women traders who own mobile phones in Accra markets. For this reason, participants were selected with a specific purpose in my mind. Purposive and snowball sampling in the four major markets was, therefore, the most practical approach and the most appropriate sampling techniques used to select women traders for the study. Women traders who were engaged in perishable goods (vegetables - cabbage, carrots, lettuce, green pepper, cucumber, spring onions, tomatoes, onions and pepper) and non-perishable goods (textiles) were selected and interviewed for the research. The fieldwork was conducted between the period January and May 2013.

It is argued that in studies in which the main goal is to understand common perceptions and experiences among a group of relatively homogenous individuals, twelve interviews should suffice (Guest et al., 2006). In line with this assumption, participants in this research were considered relatively homogenous in the sense that they are all self-employed (sole proprietors) female traders — perceived to have low educational levels — in Accra markets, therefore these similarities appear enough to justify a data set of twelve interviews in each of the four markets selected. Considering this assumption at

²I choose to call it multi-sited because the study was conducted in four sites (markets) in Accra.

least not less than twelve women traders were interviewed in each market selected. In addition, twelve queen mothers (including president of the Greater Accra Market Women's Association) and leaders of market associations within the selected markets were also interviewed. In total seventy-two (72) interviews³ were conducted with women traders from the four major markets selected. Table 1 shows the number of vegetable and textile wholesale and retail market women interviewed.

Table 1. Vegetable and textile wholesale and retail women traders interviewed in the four selected markets.

Conceptual focus	Markets	Vegetable traders		Textile Traders	
		Wholesaler	Retailer	Wholesaler	Retailer
Women traders in vegetables and textiles	Agbobbloshie	16	2	0	0
	Makola	4	2	4	5
	Kaneshie	2	10	5	6
	Madina	3	4	2	7

In the four markets chosen for the study, 29 women traders trading in textiles and 43 women traders engaged in the vegetable trade were interviewed. These figures include the queen mothers of textiles and vegetables and the leaders of the market associations. The number of women traders engaged in vegetables interviewed was higher because Agbobbloshie market is predominantly a vegetable market. Figures for Kaneshie retail traders are also higher because Kaneshie market is predominantly a retail market.

Two sets of semi-structured interviews were conducted with women traders using an interview guide/schedule. First semi-structured interviews with women who were either in wholesale or retail trade from the four major markets selected- Makola, Agbobbloshie, Kaneshie and Madina markets were conducted. These women traders were interviewed at their marketplaces as they engaged in their trading activities. The interviews conducted lasted for about forty-five minutes to an hour and a half, however, some interview sessions lasted for more than an hour and a half as there were interruptions by retailers or customers who the women traders attended to. Secondly, key-informant semi-structures interviews were conducted with leaders of the various market trader associations and queen mothers of the entire markets within the selected markets which enabled the acquisition of data on how the queen-mothers and leaders acquire technological know-how to explore their mobile phones.

The women traders were asked to choose the local languages (Ga or Twi) that they preferred and felt comfortable in expressing their views and experiences when interviewed. Most of the women traders, queen mothers and leaders opted for a local language (Twi or Ga) with the exception of seven traders who opted to speak English. There were 23 interviews conducted in Twi, forty-two (42) in Ga and seven (7) in English⁴. Only in Agbobbloshie market did no woman traders opt to speak English;

³A data set of 72 interviews was considered quite adequate for such an explorative qualitative study as transcriptions and analysis were done during the fieldwork. In doing this, interviews were discontinued as no new additional findings were realized as the interviews were being analyzed.

⁴Two of these interviews were conducted in a mixture of English and Akan (Twi).

there were women traders, queen mothers and leaders who were interviewed in English in the other three markets (Makola, Kaneshie and Madina). Informed consent was sought before interviews began. All interviews conducted were recorded and photographs of participants' mobile phones were taken with the permission of the participants in order not to lose any vital information and to obtain reliable data. Some notes were taken during the interviews highlighting the key areas of significance to enable analyse the data. Confidentiality was also assured before the commencement of interviews.

Thematic content analysis was employed to uncover themes from the interview transcripts and to develop broader theoretical propositions for the study on the basis of the practical realities encountered by the research subjects. The analysis started by translating and transcribing all interviews into English with the assistance of a Ga and Twi translator/lecturer. All the translated transcribed interviews were transferred to Atlas-ti software as primary documents.⁵ Codes were then generated and also transferred to Atlas-ti to facilitate the analysis process. The coding took the form of a three-stage process. First, the transcriptions were read to get familiarized with them. Secondly, there was a work through the dataset in a more detailed manner to identify patterns that indicated instances of how technological skills were acquired to use the features of mobile phones owned and the types of phone networks being used by the women traders. At the third stage, preliminary codes were collated and sorted into meaningful units depicting possible themes. There was a reviewed and refined of these themes and then selected extracts from the texts associated with these themes.

RESULTS

Making calls and Texting

From the narratives, only about one-third of women traders (27 out of 72) learnt how to use their mobile phones all by themselves. They were able to learn using their mobile phone manuals or followed the instructions on their mobile phone menu and settings. In all the four markets selected these are the women traders who tend to have a secondary or higher education (a little under one third or 17 out of 72) than their other trading colleagues. The majority of the women traders interviewed (51 out of 72) have basic education and one-sixth have no formal education or dropped out of school. This is a reflection of digital inequality with regard to educational differences.

On the other hand, the majority of women traders (33 out of 45) were taught how to use their mobile phones by their children. A vegetable trader in Kaneshie market explained as follows:

My third born child taught me how to answer a call, check on a missed call and also make a call. I did not go to school to a higher level so I was not able to use it easily at first.

Another vegetable trader of Agbogloboshie market narrated:

Whenever I buy a phone and I do not know how to use its functions, I ask my children to teach me how it is used to make calls, after some time I learn how it is done.

⁵Atlas ti is a qualitative data-analysis software package.

The social support to make calls came not only from children but was also received from husbands. Less than a third of the women traders (6 out of 45) were taught how to use their mobile phones by their husbands. A little less than one-tenth (4 out of 45) also learnt how to make calls from their siblings and from (2 out of 45) mobile phone traders or the shop owners from whom they bought their mobile phones. A vegetable trader of Makola market narrated:

(She laughed) my sister taught me how to make a call the very first time, she has a higher education than I do.

Another Makola vegetable trader explained:

The person I bought the mobile phone from taught me how to receive and also make calls.

All the participants who receive the support of husbands and or siblings (that is total of 10 out of 45) argue that they are able to gain support from their husbands and or siblings because they have higher education compared to what they have. This suggests that social networks are vital in the use of mobile phones among users with low educational levels.

The traders interviewed in the four markets selected preferred calling to texting. With regard to making calls they have gained experience (as these women demonstrated their calling ability during the interview) through the informal education and support received from their children, husbands and siblings over the years because they are able to differentiate between the green and the red button on 2G (and 2.5G, 3G) keypads to make calls all by themselves. This is because the keypad of 2G (and sometimes 2.5G, 3G) mobile phones have green and red key icons which are used to make and receive calls and these are easily identifiable. The green and red icons on the keypad are not combined with any other letters or numbers, therefore easy to use when taught. The green and red keypads are one of the main interfaces of most 2G mobile phones: the type of mobile service that predominates among the participants in all the markets selected. 3G mobile phones have complicated interfaces: they sometimes have the keypad with the red and green button key pads but most have more complex visual interfaces, often with touch screens. 3G mobile phones with touch screens are not common among traders (15 out of 72 women interviewed own mobile phones that support 3G mobile services. Five of them own 3G mobile phones with touch screens) as they claimed that they cannot easily operate these mobile phones, as the keypad is embedded. Considering the educational levels of traders interviewed, they find it difficult to be involved in such complex task of making multiple presses and taps to assess services beyond calling owing to the type of mobile handset they owned. Although taught by their children, these women are unable to engage in texting and thus making of calls become a sufficient way to use their mobile phones. However, a small proportion of women (19) traders interviewed who can send and reply to texts did so by way of knowledge acquired from their children, as they learn to differentiate between the alphabets and numerals on their keypads.

Loading Credits

In the context of loading credits onto mobile phones, social support was also received from children and husbands (in some cases siblings) in the loading of airtime for the very first time. All the women traders who receive support from their husbands (or

siblings) opined that their educational level is higher than them, the women traders, reflecting the reason why they can grant them such support. Inequality in education (coupled with the complex mobile interfaces) is what has led to the receiving of social support among these traders. Through the support received from children and husbands or siblings, the majority of women traders (30 out of 45) appear to have developed the technological know-how to navigate their complex mobile interfaces to load credits on their mobile phones. It would seem these women are able to engage in loading of credits easily after receiving support (compared to texting) owing to their knowledge about figures or numbers as they deal with the calculation of figures or numbers on daily basis due to the nature of their business.

Storing Contacts

With reference to storing contact numbers and names, adequate technological know-how has not been attained by the majority (44 out of 72) of the women interviewed because they find it a bit complicated. Some of the women traders explained that they have been taught several times by their children how to store their contact numbers and names but were still unable to do so. They usually make the one who wants his or her number to be stored dial the number on their mobile phone and then they beep the person once (flash) which enables the number to be stored automatically in their dialled numbers menu. They then keep the last two digits of that person's number and name in memory and when they go back home, the women traders ask their children (or grandchildren) to store it in their contacts or phonebook. Another way is that they write the number down in a book and when they are home, ask their children (or grandchildren) to store it in their contacts or phonebook. A textile trader of Madina market said:

No, I can't but then I will dial the number and beep the person and then the number is saved on the mobile phone. I make sure I keep the last two digits of that number in memory and when I get home, I tell my daughter to save it with the name for me.

A vegetable trader of Agbogloboshie market states:

My children store the numbers on my mobile phone for me, I do not. When someone gives me her number I write it down and when I get home I call my son, hey 'Junior' this is one of my customer's numbers and she is called so and so and then I give it to him and he stores it. Or I call my daughter Serwaa to do it.

Other traders interviewed gained support from their husbands to store their contact numbers for them. A textile trader of Kaneshie Market reiterated:

My husband bought the mobile phone for me and he stores the numbers for me, he taught me how to make a call but now I know how it is done. I always keep the last two digits of my contacts in memory, so whenever I want to make a call, I go through the contacts and check the names that tally with the last two digit of the person I want to call, and then I make the call.

Apart from learning how to make calls on their own, it was realised that those traders (27 out of 72) with secondary or higher education who learnt how to use their mobile phones all by themselves can easily store their contact numbers and load credits on their

mobile phones. This suggests that learning on one's own paves the way for one to acquire more knowledge and hence gain technological know-how in using a technology.

The knowledge of mobile money and mobile banking

Mobile phones have gone beyond the basic communication function; they, therefore, provide access to a range of services, such as mobile banking and mobile money. In Accra, many sole proprietor businesses have emerged to render these mobile services, yet the women traders in this study appear not to have taken advantage of these services in their trading transactions. Most of the women traders interviewed stated that they have heard of mobile money transfer but have never utilised the service. While one-tenth of the traders had used mobile money services in the form of money received from their children abroad, they themselves had not used the service before. With regard to mobile banking, the women traders appear not to be aware of the existence of such mobile services. This could be that although mobile money and mobile banking services have been introduced by the mobile network providers (first introduced by MTN in 2009 followed by Tigo and Airtel in 2011)⁶ in Ghana and operated in most of the banks, they appear to be in a formative stage during the time of the study⁷.

DISCUSSION OF FINDINGS

Literacies and dimensions of digital inequalities among women traders in Accra

The use of the myriad opportunities and services of the mobile phone one owns requires different levels of technological know-how or the various forms of literacies, which include basic language literacies, technical literacies and information literacies. Thus, the users of mobile phones with higher levels of literacy are the ones expected to benefit more from the opportunities offered by mobile phones. It appears there is a participation divide (Hargittai & Walejko, 2008) – in Accra, and this is reflected in digital inequalities among the women traders in this research, as the majority of them are not able to use their mobile phones beyond the basic function of calling.

Basic Language literacy as a dimension of digital inequality

Mobile phones provide a wide range of services beyond voice communication, most of the women in this research use only the basic function of their mobile phones: that is making and receiving calls. The majority of these traders were not able to explore their mobile phones beyond calling – for example, very few were able to send texts.

Texting is time-consuming and involves basic language literacy (writing and reading) as well as creativity because of the limited text characters available for a message. In Accra, basic language literacy to a large extent is received through formal education. Even though the wholesale and retail women traders in this study have an understanding of numbers and few English words to enable them to engage in their business activities, many of them have low literacy level in the country's official language, English, (which is also the medium of instruction in schools) and in their local languages, due to their low educational levels as most of these traders have basic education.

⁶ Bampoe (2015).

⁷ As mentioned early on interviews were conducted in 2013

As a result of their low educational levels, these women traders lack basic language literacy, which hinders their use of text messaging. Nonetheless, those with secondary or higher education tend to text more as these women also access the internet and involve in Facebooking and WhatsApp, which is another form of texting. Also, apart from their education levels being higher, they are younger and most of them have smartphones. These women traders with secondary education or higher are therefore able to navigate their mobile phone interfaces (keypads), as they write and also read while sending or receiving (chats) text messages. This same category of traders with secondary school or higher who are able to text, due to having basic language literacy, also learnt how to make calls and store their mobile contacts on their own through the readings of their mobile phone manuals.

The lack of basic language literacy serves as a barrier for those who have just basic education to explore their mobile phones beyond calling. The differences in the levels of basic language literacy, which is inferred from the level of formal education, seem to be one aspect of digital inequality among the women traders in this study. The majority of traders in this study, who are unable to send SMS, due to their low educational levels, have no knowledge of the new forms of abbreviated language used for Short Message System (SMS). This tends to create inequalities among these women and their trading colleagues who are able to use text messaging.

Technical literacy as a dimension of digital inequality

The quality use of a mobile phone involves various forms of literacies of which one is technical know-how or technical literacy. Many of the women traders in this study lacked technical literacy as they were not able to exploit all the mobile services and features their mobile phones offer. This is because of the differences in the model of mobile handsets and the mobile phone services that they own. Smartphones or 3G mobiles⁸ were owned by few women micro-traders in this study; most of the women-owned second generation (2G) mobile phones. This pattern of ownership of mobile services was noted to be based on a scale of activity and age, as it tended to be young retail traders who owned smartphones in the markets selected for this study.

Differences in models of mobile handsets owned seem to be associated with digital inequality as those with latest models would have more mobile services to explore and benefit from. Even though some of the women traders with secondary or higher education owned smartphones and used texting, there were others in this same category that lacked technical literacy and hence tended not to use their mobile phones beyond the calling function. This is a reflection of lack of technical literacy even though technical inequality (such as differences in mobile handsets owned) existed among the women traders in the study.

With 2G being the predominant mobile services owned, many of these women find the interface of such mobile phones to be complicated to use beyond calling function, such as text messaging. Reid and Reid (2007) argue that sending of SMS on a typical second-generation (2G) mobile phone takes time and significant effort—the keypad is cramped and awkward to use, often requiring several key taps to enter a single character, the handset display is small and poorly lit, and though editable, messages are limited to 160

⁸Some of the traders own 3G mobile phones.

simple text characters. Most of the traders interviewed who own second generation mobile phones lack the technical mastery to use their mobile phones to send text messages, as they find such mobile phone interface complicated. They, therefore, struggle to use and explore the myriad opportunities that their mobile phones have to offer. This could be because they encountered mobile phones and associated digital technologies later in life – a reflection of their status as ‘digital immigrants’ (Prensky, 2001) or ‘digital migrants’ (Zubieta, 2010). It appears that most of these traders who lack technical literacy are first time users of digital technologies, and therefore do not have broader knowledge and understanding to navigate their mobile phone interfaces and to explore the services their mobile phones have to offer.

Also considering the educational levels and ages⁹ of traders interviewed, as well as the nature of market activities, traders find it difficult and might not have the time to be involved in such complex task of making multiple presses and taps to assess services beyond calling owing to the type of mobile handset they owned. This could be one of the reasons why these traders have no interest in text messaging and tend not to go further to explore the other features of their mobile phones. From this finding, it would appear that the complex nature of keypads or mobile phone interfaces apart from educational status and age play a significant role in assessing of mobile services.

These traders are able to enjoy the basic functions of their mobile phones due to the support they receive from others – and particularly their children. The children of these women traders are able to teach their mothers how to make calls and to send text messages. While these women are taught by their children how to send texts, they find it difficult and complicated because of their lacking of technical literacy. They find it easier to make and receive calls because they are able to identify and differentiate between the green and red icons on the keypad of their complicated 2G mobile phone interfaces; they do this based on the instructions they have received from their children. It appears to a large extent that these children of women traders, in the selected markets for the study, are more familiar with mobile phones and have more technical literacy.

The fact that many of the women traders depend on the technical support of their children shows that age or intergenerational differences appear to be associated with acquiring the different levels of literacies required to use one’s mobile phone. It is argued that young people who grow up in the era of mobile phones and associated ICTs are said to be ‘digital natives’ because they are familiar with these technologies and, seemingly, are able to effortlessly adopt and adapt to changes in the digital landscape (Prensky, 2001). These children of women traders are born in the era of digital technologies and grew up with them – hence their familiarity with mobile phones. It is worth noting that the majority of the women traders were at least forty years of age when interviewed, which indicates that they were not born in the era of digital technologies (mobile phones were introduced in Ghana in the 1990s with majority acquiring mobile phones late 2003 and early 2004)¹⁰ and are therefore now getting the knowledge and adapting to these new technologies. Age or intergenerational difference is therefore associated with the pattern of use of mobile services and this reflects digital inequality.

⁹ Majority of traders interviewed were at least between 40 to 50 years.

¹⁰Frempong et al. (2005).

Digital inequality in the form of technical literacy associated with intergenerational differences was also evident in the use of another basic function of mobile phones: the storing of contact numbers onto one's mobile phone. Majority of the traders in this study lack the technical literacy required to navigate their mobile phone interfaces and store their contact numbers on their mobile phones; these numbers are stored in their contacts or phonebooks by their children (or grandchildren)¹¹, which is again a reflection of intergenerational (age) differences among these traders and their children.

The rendering of technical support by children to these traders reflects a lack of autonomy (control) in the use of their mobile phones. Digital inequality, therefore, appears to exist among these traders, as they lack both the basic language and technical literacies required to have autonomy or control over the use of their mobile phones. Lacking the autonomy to use one's mobile phones due to the gaining of social support from others reflects digital inequalities as argued by DiMaggio and Hargittai (2001).

Information literacy as a dimension of digital inequality

Information literacy: that is the ability to search, select and process information; (Van Dijk & Hacker, 2003) by entering the digital domain of digital technologies is associated with having some level of technical literacy and basic language literacy. With information literacy, mobile phone users with smartphones are able TO make use of the various digital domain, typically hosted on the Internet, and access more advanced services such as online banking and money transfer services. These advanced mobile services also involve texting which means one should have basic language literacy. However, there was no evidence of mobile banking or the use of money transfer services among women traders in this study, even though a few of them owned smartphones.

This finding suggests that although at its formation stage during the study, numerous advertisements and awareness campaigns on Televisions and billboards have been made by the mobile network service providers and banks (and micro- financial institutions) about these services, the traders interviewed seem not to be informed to adopt these mobile services. This might be because they do not understand the mechanisms and the role that these services can play in their trading activities. The integration of these mobile services into micro-trading activities could minimise risks, such as thefts and attacks since women traders often carry large sums of money on their journeys to purchase goods in the farmlands. However, to understand these services and benefit from them, one needs to be aware and educated about them. Language appears to play a role in the dissemination of such information as the majority of these advertisements and awareness campaigns use English. The low educational achievements and low literacy levels of traders (particularly in English) of the study may explain this lack of awareness. In this context, mobile network providers should consider ways in which they disseminate information on these mobile services with regard to the language used. Educational differences and intergenerational differences associated with the forms of literacies mentioned tend to create a 'social divide' (Norris, 2001) among women traders as it is those with secondary or higher education and those that are younger who tend to go beyond the voice communication services provided by mobile phones owned to make use of the digital domains hosted on the internet.

¹¹In some cases friends who have the technological know-how to store contact numbers assist them.

CONCLUSION AND IMPLICATIONS

The utilisation and enjoying all the mobile services of a mobile phone owned could offer are determined by having adequate knowledge and various forms of literacies - technical literacy, basic language literacy and information literacy. Therefore, the inability to enjoy the full benefits from one's mobile phones compared to others who enjoy the full benefits shows a disparity, that is inequality in quality of use. Women traders have integrated mobile phones into their trading activities despite having limited knowledge and technical know-how to master some of the features of their mobile phones, notably texting. Their limited knowledge stems from a lack of various forms of literacies: lack of technical literacy; basic language literacy; and information literacy. These are associated with their educational levels, technical means (mobile handsets models), intergenerational or age differences and dependence on support from their children when using their mobile phones.

As this paper has highlighted digital inequality, therefore, seems to exist among these women traders in Accra. These women are challenged with their mobile phones as they navigate their ways to use them through the social support they have received from their children and other social networks. They have learned how to use the basic functions of their mobile phones through the informal education provided. The basic function of mobile phone that is making of calls have tended to become sufficient for their trading activities. This suggests that further training and social support in exploring beyond their basic functions of their mobile phones is necessary to propel them develop themselves further in the use of mobile phones and associated ICTs and enjoy more of their benefits.

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