

Economically disadvantaged families domesticating mobile devices: Case of South African

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Abstract

Information and Communication Technology (ICT) is becoming increasingly ubiquitous and entrenched in everyday life. This phenomenon is becoming more pronounced with the unprecedented growth of mobile technology. Like most countries, South Africa is also experiencing a high mobile device proliferation with about 84% of South Africans who own or have access to a mobile phone. ICT such as mobile devices have been reported as having an impact on family dynamics and parenting. The widespread usage of mobile devices, combined with the social implications of their presence in society, specifically within the home and within families, makes worthwhile a study into the manner in which families adopt and use this technology.

The purpose of the study is to explore how South African families domesticate mobile devices. The study uses Domestication Theory as a theoretical lens. Data for the study was collected through semi-structured interviews with a sample of 17 respondents representing 14 South African families. The analysis used a thematic analysis approach. The findings show that the number of devices in a family is not a reflection of the social-economic status of the family. Findings also indicate that the type of mobile devices could be affected by socioeconomic status. Low/medium Living Standards Measure family members tend to limit their use to basic features of the technology. Other factors influencing the commodification include social influence, affordability, and personal perception, and intentions for use.

Keywords

Domestication Theory, Mobile devices, economically disadvantaged, South Africa

1. Introduction

Recent years have witnessed a growth in the use of technology at personal and family level. For example, microbusiness owners use mobile phones for their business operations while managing family activities (Anwar & Johanson, 2015; Donner, 2006). Despite this growth, studies focusing on the use of mobile devices at the micro level, specifically at family level in developing countries, are still sparse. Most studies still tend to investigate the adoption and use of technology at organisational level (Niehm, Tyner, Shelley & Fitzgerald, 2010; Weidner, Rosa & Viswanathan, 2010). However, the knowledge from

corporate adoption and use of technology may not be transferable to micro context since the adoption of technology in business organisations differs from the family setting (Venkatesh, Brown & Hoehle, 2012).

The existing studies on mobile devices from a family perspective have shown that mobile technologies have been a source of conflict and negotiations between parents and their children. For instance, the studies have shown that, at times, parents resist acquiring mobile phones for their children as they see them as an unjustified status symbol; on the other hand, the children employ strategies to resist and circumvent the parental surveillance on the phone usage (Haddon, 2003). Mobile phones are also used for communication to check the well-being of family members while engaged in business activities (Donner, 2006). Given that mobile devices are shaping different spheres of life, there is still a need to understand technology adoption at family level (Haddon, 2006; Mpazanje & Chigona, 2012; Venkatesh, Brown & Hoehle, 2012).

The study seeks to understand the impact of socioeconomic factors on the manner in which families domesticate mobile devices in the South African context. We focused on mobile technology since it is this type of technology which is more pervasive in developing countries, and especially amongst disadvantaged communities. The study adopted Domestication Theory (Campbell, , Ling & Bayer, 2014) as a lens to understand contextual and psycho-sociological factors that influence mobile device adoption in a family setting. The study employed a qualitative approach where we interviewed members of families on their adoption and use of mobile technology.

2. Context of the study

The use of ICT, in particular with access and usage of mobile devices in South Africa, has flourished in the last decade (Beger & Sinha, 2012). Between 2005 and 2009 the number of South African owning, renting, or having access to mobile phones increased by 20% with around 84% of South Africans estimated to now have ownership of or have access to a mobile phone (Beger & Sinha, 2012; Blycroft Ltd, 2012).

The post-apartheid South Africa still suffers from disparate socioeconomic standings between the racial groups (Beger & Sinha, 2012). Individuals who were classified as black under the apartheid system are now classified as “previously disadvantaged” (Alexander, 2007). In South Africa, in the affirmative action context, the term “black people” is used broadly to refer to Africans, Coloureds, and Indians (Alexander, 2007). The term “previously disadvantaged” also includes white women, and disabled people (Alexander, 2007).

In this study the term “economically disadvantaged” includes families that contain individuals who qualify to be classified as “previously disadvantaged”. In addition, the family should fall in a Living Standards Measure (LSM) group between 1 and 7 according to the South African Audience Reference Foundation, which is a measure of socioeconomic status currently available in the country (Morar & Stein, 2011). LSM groups are classified on a scale of 1-10, with 1 being the lowest in terms and 10 the highest. The groups between LSM levels 1-4 represent low-income households, 5-7 represent middle-income households, and 8-10 represent high-income households (Stats SA, 2012).

3. Theoretical framework: Domestication Theory

The “domestication discourse has its origins in the household integration of media technologies such as television, radio and the internet” (Lees & Sexton, 2012: 1391). Domestication Theory focuses on how digital technologies are interwoven with domestic life; it allows researchers to examine how objects move from anonymous and alien commodities to become powerfully integrated into the lives of their users (Lally, 2002; Selwyn, 2012). The theory can be used to answer questions of how people “make sense of, give meaning to, and accomplish functions through technical objects” (Caron & Caronia, 2001: 39). The power of the theory lies in its ability to explain what technologies mean to people, how they experience the technologies, what role it plays in people’s lives (Haddon, 2006). It presents a shift from the models which assumed that adoption of technology was a rational, linear, mono causal, and technology-dependent process (Berker, Hartman, Punie & Ward, 2005).

Domestication Theory posits that personal technologies go through a series of stages, as they develop from simply an idea to something newly acquired, to part of the mix of other objects of everyday life, to part of the user him/herself (Campbell et al., 2014). The first stage of domestication is *commodification* – the way in which a technological product is designed and given an image by users when it is publicly unveiled (Chigona, Chigona. Kausa & Kayongo, 2010). It is a process through which material and symbolic artefacts are created, opened to the influence of the consumer, and brought to sale in the formal market economy (Lees & Sexton, 2012).

When the product is purchased, it goes through a process of *appropriation* – a point at which the product is possessed by the user (Chigona et al., 2010). The process of appropriation, however, is not simply a matter of purchasing the product, since what consumers do with the technology in their homes is also important (Silverston & Haddon, 1996). Appropriation refers to how the product makes its way into the user’s environment. The technology finds space in and enters the user’s geographical environment, but is not necessarily accepted (Chigona et al., 2010).

Incorporation describes how the product is incorporated into the user’s daily activities by giving it a function in the household and being fitted in a pattern of use (Habib, 2005). The final stage of domestication is *conversion*. At this stage the user shows his or her adoption by physically and symbolically displaying the product in public (Chigona et al., 2010). Conversion refers to anything consumers do to signal their participation in using the mobile device (Habib, 2005).

4. Research methodology

This study is interpretive. Data was collected using interviews and observations. The unit of analysis was a family. We focused on families that fall under the umbrella of economically disadvantaged families. Families who fall in the middle (LSM 5-7) and low (1-4) groups were considered appropriate for the study. Families in the high LSM group (8-10) were used for comparison purposes (Schneider, Dasappa, Khan & Khan, 2009). In addition, the study focused on families who qualify to be classified as “previously disadvantaged” in the South African context, as socioeconomic differences are largely racially polarised (Alexander, 2007). A total of 17 individuals were interviewed; these represented 14 families.

The research instruments for the study were semi-structured questions derived from literature and as informed by the theoretical framework. The instrument gathered information about family demographic information; ICT ownership; and the domestication process. Data analysis followed a thematic analytical approach. The interviews were transcribed to facilitate the analysis. Thematic analysis aims to find the themes that arise from textual data (Attride-Stirling, 2001). The study employed correlation analysis; this was purely graphical. No statistical analysis was done since the study was qualitative and the sample size was small. Graphical representation gives a good indication of what statistical calculations could support.

5. Discussion of findings

To facilitate the understanding of the discussion, a numbering system is used to identify the respondents. For example: in the term F1.3, 'F1' stands for family number 1 and the number after the dot represents the order of the family member within the family. Appendix summarises the sample for the study.

5.1. Demographic

Eight out of the 14 families fell within low (1-4) or middle (5-7) LSM level. The other six families were in the high LSM. The number of family members ranged from three to ten per household. Most of the families had a traditional family with distinctly demarcated roles: a father, a mother, and their children. Some families varied from the tradition. For example, Family 7 consisted of a grandparent living with two grandsons. Most of the families had a family member employed, mostly either the mother or father or both. However, in some families no individual was employed (e.g. Family 4, 7 and 10), but had individuals who were pensioners and were the breadwinners. In terms of gender, 61% of the respondents were males and 39% were females. The majority of respondents were African (78%). Coloured individuals contributed 11% of the respondents and the remainder were either White or Indian.

5.2. Mobile device ownership

Mobile device ownership varied across the various families both in terms of the type of mobile devices and in terms of the number of devices owned. The number of mobile devices was related to the number of members in the family. As can be seen in Appendix, the number of mobile phones was equal or close to the number of family members.

The data shows that the family size, and not LSM, affects the number of mobile devices in a family. A comparison of Family 14 (the highest LSM) and Family 10 (the lowest LSM) reveals interesting insights on the types of mobile devices the families owned. Most members of Family 14 had smartphones:

"I have a Samsung S3 Mini . . . My brother recently got a Samsung S5 . . . My mother just got a new one, I think it's a Samsung . . . my dad has a Nokia, it's a feature phone"
(F14.5).

Further, the sister-in-law to F15.5 had a Sony Xperia. In contrast, Family 10 had three individuals, but only the member who was interviewed owned a smartphone (a Nokia 700). The individual's mother owned "*just a basic phone*" he stated that: "*It's a Nokia. Those black ones. I'm not sure of the make. It's just a basic phone, it doesn't even support*

WhatsApp” (F10.2).

The tendency for families with high LSMs to own smartphones can be observed in other families as well. Family 7 had the same number of individuals as Family 10 and a similar family structure with a pensioner living with two younger family members. In Family 7 only two of the family members owned phones – both of them had smartphones. Similar to Family 10, member F7.3 was deemed too young to have a mobile device. However, unlike Family 10, the individual who was interviewed in Family 7 (F7.2), along with his grandfather, both owned smartphones. From these observations we can conclude that LSM level did not necessarily affect the number of devices a family had. However, it influenced the type of mobile device owned. Therefore, it could be concluded that socio-economic status influences the type of mobile devices that a family acquires (Morar & Stein, 2011).

5.3. Commodification of mobile devices

Commodification of the mobile devices in the families was influenced by device features, social influences, perception, intention, and affordability. With regard to device features, the younger people tended to pay more attention to device features than the parents or older generation. This difference among generations is supported in literature; Sarker and Wells (2003) mention age as one of the demographic factors influencing mobile device adoption.

There were no significant differences between families of different levels of LSM in terms of how social influence affects the adoption of mobile devices. The purchase of a given mobile device was influenced by friends (F10.2, F11.3 and F13.3), family members (F1.4, F1.5), or societal pressure. F12.3 noted that *“I saw that someone else had it, and it was really popular in our class; a few people just got it”*. One respondent mentioned that he heard about his Samsung smartphone from:

“. . . all over the show. Lots of people I knew had it. It was on the newspaper, TV adverts, pamphlets, and if you go to an MTN or Vodacom store they always mention it” (F14.5).

It was observed that family members also influenced those with the power to purchase the device. F3.3 mentioned that he was influential in pressurising the parents to purchase a laptop for the children and *“also my little sister also put in a bit of pressure”*. The finding on the impact of social influence on mobile device adoption is consistent with past studies that have observed that people who already have frequent contact with individuals who use mobile devices are more likely to adopt mobile devices (De Silva, Ratnadiwakara & Zainudeen, 2011). We can conclude that social influence is a substantial factor affecting the adoption of a mobile device in both high and low/medium LSM families.

Respondents from a low/middle LSM family who were the parents/older generation, (e.g. F6.1, F6.2), were not excited by newer smartphones but preferred using simple devices as demonstrated by F6.1: *“I own basic old phone for making calls. I definitely do not want a new phone”*. It would seem then that the older generation in low/medium LSM families had negative perceptions about newer mobile devices and did not adopt them easily. F4.3 said: *“My mother was given one as a present; she didn’t necessarily want one”*. This attitude is in contrast to young individuals from low/medium and high LSM members, and older family members from high LSM families who had an interest in new mobile devices and had a

positive perception about their usefulness. For example, F13.3, a young member from a low/medium LSM family, was planning to upgrade and was specific about features he perceived important for the new phone.

From the evidence it can be said that LSM as well as personal and demographic factors play a role in shaping the perceptions of new mobile devices. Mobile device affordability was a strong key theme that was illustrated by most family members. Although all the LSM groups considered affordability of mobile device, each group's financial situation? was different. The findings show that the LSM level affects the type of device that families adopt, which also correlates with the price of the device. Income levels, which affect affordability level, are cited in literature as an important factor in mobile device domestication (Pachauri & Jiang, 2008; Van Biljon & Kotze, 2008). Literature notes that perceptions, both positive and negative, play a significant role in the consumer's choice to purchase a device (De Silva, Ratnadiwakara & Zainudeen, 2011; Fusaro & Bonneau, 2007; Lim & Soon, 2010; Stewart, 2003).

5.4. Appropriation

5.4.1. Objectification

Respondents from low/medium LSM families received their mobile devices as gifts or through hand-downs or, in the case of younger family members, parents or guardians funded their own acquisition. F1.4, and F1.5 received their smartphones as gifts from their aunt; F5.3 got her Blackberry from her uncle – *“it was sort of an achievement present”*. Giving phones as gifts was not common in families of higher LSM. This may indicate that LSM has an effect on the manner in which an individual acquires a device. Hand-downs were common in low/medium LSM. F10.2 explains: *“When I got a new smartphone, I gave my old feature phone to my mother who is a pensioner”*. There was no evidence of hand-downs among high LSM families in our sample. This could indicate that members of high LSM families are more likely get a brand new device.

The final means of acquiring mobile devices was through self-funding or self-purchasing of the device. Amongst the low/medium LSM families it was common for younger family members, especially those who were students, to fund their own mobile device acquisition, (e.g. F4.3, F13.3, and F6.3). F10.2, a university student, funded his smartphone, while the funding for his laptop came from a bursary sponsor. This was not common amongst high LSM families. Here only F11.3 gave evidence of self-funding, albeit partially, since his parents paid a portion of the costs for his tablet. From the evidence, we can conclude that low/medium LSM family members are less likely to rely on parent/guardian funding to acquire a new mobile device than members in high LSM families.

5.4.2. Communication

The analysis shows that most common uses of the devices were for basic communication, specifically in making phone calls, and sending text messages. Amongst them, there was a difference of how members of different generations from low/medium LSM families used mobile devices. The older generation in low/medium LSM families used the mobile phone only for basic communication. This is probably due to low literacy levels, as one respondent stated about her mother:

“ . . . she’s only used to making and receiving calls. She cannot read as well, so she can’t send messages and she can’t read messages that are sent to her phone so she uses the phone only for phone calls” (F10.2).

The pattern is different among the high LSM families where older family members used their mobile devices beyond the basic communication function. They could listen to music, watch videos, take photos, record videos, use special native apps, use the Internet, and perform many other activities. The younger generation from both high and low/medium LSMs also engaged in these functionalities. Their engagement was influenced by moderating factors of personal preference:

“It has a good camera. I’m into cameras and one of the things I look for is a good camera. The one I was using had 1.3 megapixels and this one has 5 megapixels. So apart from other things like fast Internet, browsing the Internet, using emails, and supporting WhatsApp and other social networks, apart from that, I take those as the bonus, but the main thing is for it to have a good camera” (F10.2).

“My parents . . . use it for GPS. My dad recently bought quite sophisticated GPS software which he uses. He only recently started using it for social networking like WhatsApp, but he doesn’t really use it for that. I think it’s mainly communication, getting information like weather updates, GPS, not really gaming. My stepmom also uses it for GPS, I think she has games on it because of my little brother” (F11.3).

This observation shows that LSM affects the manner in which older generation family members experience and use mobile devices.

5.4.3. Entertainment

Young family members from both high and low/medium LSM families used their mobile devices for entertainment such as gaming, listening to music, reading, or watching videos. F12.4 played games, listened to music, and used Instagram. Similar findings were displayed in low/medium LSM families; F10.2, from a low/medium LSM family, used his mobile phone for: *“For everything, taking photos, video, recording, just for everything”* and *“. . . and listening to music, taking videos and photos”*. Older family members in high LSM families sometimes used mobile devices for entertainment purposes; however, not as extensively or frequently as the younger family members. With Family 12, a high LSM family, F12.3 and F12.4 explained that their father (F12.1) played games on his mobile phone and that their mother (F12.2) used her phone for reading the Bible. Regarding F12.3 and F12.4, even here the children used the phones much more for entertainment than their parents did.

5.4.4. Parental control

We also noted the theme of parental control. Parents were reported to sometimes limit how the younger family members could use their mobile devices. This corresponds with Haddon’s (2003) observations. This behaviour from parents/guardians was more apparent amongst low/medium LSM families, as shown by the following examples:

“I wouldn’t say control, but my little sister sometimes gives her phone to my mom. I don’t know why, I’ve never really inquired about it” (F6.3).

“It depends on whether I’m around them. When I’m around them they don’t like it when I’m on my phone. So I avoid texting when I’m around them”. This is—could possibly be

because you can also become isolated in the sense that if you're always on your phone you can become negligent of people around you" (F5.3).

It seemed that parents/guardians in high LSM families were more liberal in that they allowed their children to use their mobile devices. Where some form of control existed, it was superficial and did not affect mobile device access for the child. When the technology is being domesticated, Chen and Katz (2009) found that retained parental authority can positively influence children's technological-mediating activities, while family instability constrains the influence. Thus, although mobile devices were being incorporated in the family and perceived

"as not just one form of communication, it's not just phoning, it's also email, social networking, phoning, having conversations, and sending text messages . . . and Skyping as well, so it allows you to have multiple forms of communication over distance" (F11.3).

Respondents felt the use of technology in the homes needed to be managed. They felt that with excessive use of technology within the home space, ". . . *the communication link can be broken*" (F13.3). This is in line with Shah and Godiyal (2004) who mention that technology can reduce human interaction in homes.

5.5. Conversion

The main themes under conversion include conversation, public usage, and sharing. The most common form through which the respondents shared information about their mobile devices was through conversations. Older family members, from both low/medium and high LSM families were more reserved in engaging others in conversations about mobile devices. F4.3 stated that *"I discuss features with my friend. My parents don't care much about features"*. Although younger members discussed mobile devices with their peers, personal factors affected the extent to which individuals discussed them. With high LSM families, some parents or older generation members discussed mobile device-related issues, but it was not to the same extent or level of knowledge as with the younger family members.

Publicly using one's mobile device was also identified as a means of influencing other people about the device, whether consciously or not. Public usage seemed to be influenced by the individual's view of the mobile device as one is more likely to be comfortable to use the device if he/she feels positive about that device. Evidence for this can be found in F12.3's response:

"My sister said that she felt embarrassed to take out a Blackberry in her class one day, because it was chipped and stuff. And people when they hear polyphonic ringtones they are going to laugh" (F12.3).

The perceived social status attached to mobile devices differed amongst individuals, both from low/medium LSM families and high LSM families. F8.3, from a high LSM family, stated the following about his iPhone: *"For some reason the brand has a strong social appeal"*.

Sharing of mobile device usage with peers was also common among the respondents and their family members. Most respondents indicated that they were comfortable with sharing their mobile devices. However, some respondents felt that their mobile device, especially

phone, was private. From low/medium LSM families, individuals displayed a mainly open response about sharing mobile devices (F10.2, F3.3), whilst F6.3 and F5.3 did not feel comfortable sharing their devices.

6. Conclusion

The analysis showed some interesting information about domestication of mobile devices in economically disadvantaged families in South Africa. Firstly, we noted the number of devices in the homes did not depend on the socio-economic status of the families; families of different economic status tended to have devices for all the members who were adults. However, the type of mobile devices could be affected by socioeconomic status, as low/medium LSM family members tended not to consider complex mobile features in the commodification stage of domestication. Other factors influencing the commodification, in addition to the devices' features, included social influence, affordability, and personal perception and intentions for use.

With regard to the objectification stage, family members of low/medium LSM families may rely on gifts, hand-downs, and self-funding in the case of some children in the family. Daily usage of mobile devices comes with a variety of dimensions. Usage ranged from focusing on basic communication functionality such as phone calls and text messages for older family members, to advanced features such as Internet, social media, and entertainment media for younger family members. Influence on parenting has been reported, with parents sometimes limiting how and when mobile devices can be used by the children. The age and personal view on mobile devices influenced the manner in which family members publicly shared their mobile device experience. Overall, mobile devices played a significant role in economically disadvantaged families, especially for communication. The study also noted perceived positive as well as negative impacts on family dynamics. This study has contributed to the general body of knowledge on technology adoption and specifically on how technology becomes domesticated.

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Appendix 1: Demographic profiles of respondents

