

*Full Length Research Paper*

# Influencing factors to mobile phone adoption among urban youth in Botswana

William Lesitaokana

Department of Media studies, The University of Botswana, Private Bag UB00703, Gaborone, Botswana.

Received 22 September, 2015; Accepted 30 November, 2015

**Drawing from the focus groups and semi-structured interviews conducted on urban youth in Botswana, this study adds to the literature of mobile phone adoption among youth in the global South. The study indicates that mobile phone adoption among youth in Botswana is predominantly influenced by factors such as the need for connectedness, cost and perceived usefulness of mobile phone handsets. Moreover, this study demonstrates that acquisition of mobile phones among youth is an ongoing process, as it involves a young person starting to acquire and use a mobile phone (initial adoption), and then developing a strong link with the device through continuous consumption. This paper goes on to argue that although mobile phones are global technology, in each region young people's adoption of the devices is shaped by their traditional lifestyles, as well as the socio-economic challenges that they face.**

**Key words:** Adoption, Botswana, influence, mobile phones, youth, challenges.

## INTRODUCTION

Mobile telephony has diffused dramatically in various countries over the past two decades. Reports indicate that many people in both the economically developed and developing worlds have access to mobile phones (Kalba, 2008; Teo and Pok, 2003). Studies reveal that youth in countries such as the USA, Japan, Norway, Sweden and Australia own and use mobile phones (Axelsson, 2010; Bond, 2010; Goggin, 2013; Ling, 2004; Skog, 2001).

Also, Kalba (2008) notes the following with regard to the global South nations, "mobile adoption has occurred on a widespread basis in the past few years in India, Africa and other low-income markets". Other empirical studies also report high mobile telephony penetration rates in sub-Saharan Africa (Chabossou et al., 2009;

Donner, 2008; Duncan, 2013; Duncombe and Boateng, 2009; Hahn and Kibora, 2008; Sife et al., 2010), in Jamaica, Colombia and El Salvador (James, 2012), and in Taiwan (Chu et al., 2009; Tsai, 2012).

In countries such as Malaysia, there are reports of high penetration of mobile phones such that the total number of subscribers out numbers the country's population (Karim et al., 2009). Due to this exponential growth of mobile telephony globally, more studies concerned with youth's adoption of mobile phones in various countries, especially from the global South are overdue. This is because the literature that considers issues about mobile phone adoption among youth is deficient, and little that is present either focuses predominantly on youth in the

E-mail: [lesitaokana@mopipi.ub.bw](mailto:lesitaokana@mopipi.ub.bw)

Author agree that this article remain permanently open access under the terms of the [Creative Commons Attribution License 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

global North, or is concerned with the facilitating factors to diffusion of mobile telephony. Nonetheless, while patterns of diffusion and the acceptance of mobile telephony in various countries is a strong indication that there is a high penetration of mobile communication and accessibility to mobile phones and related products nationwide, this by itself does not provide a complete explanation for mobile phone adoption among youth in the global South.

Therefore, this study adds to the already existing literature as it explores mobile phone adoption among young people in the global South. Specifically, the focus of this study is on factors that influence urban youth in Botswana to adopt mobile phones.

## LITERATURE REVIEW

Research indicates that youth in various regions have adopted the mobile phone because of its accessibility, portability, micro-coordination, entertainment, multimedia features and other information sharing possibilities (Ling, 2004). During mobile phone adoption young people also find the devices to be multi-purposive, friendly to use and relatively affordable (Haddon, 2008; Lull, 2001; Miyaki, 2006). It was reported that youth in Gloucestershire adopted the mobile phone because of its attractiveness, such as for fashion and its emancipation aspects (Davie et al., 2004).

As part of this, the handsets that appealed most strongly to young people, such as the ones that offered them opportunities for accessing the Internet, were quickly adopted. In a study conducted at a Dutch university, it was revealed that the students there adopted the mobile phone because of its practical benefits, which included being always connected and being able to communicate more quickly while on the move (Peters and Allouch, 2005). In Norway, it was found that teenagers adopted mobile phones that they could afford (Ling and Helmersen, 2000).

Roberts and Pick (2008) also note that in adopting the mobile phone, youth in middle and high income countries consider factors such as the ability of the device to function with ease and connect to the World Wide Web. For instance, in South Korea, young people prefer to use mobile phones with technological functions such as web connectivity, a digital camera, and the ability to play music and games (Leung and Wei, 2000). Similar findings are reported in Australia, where young people in Melbourne and Sydney adopt a mobile phone because of its ability to offer enhanced multimedia services such as connectivity to the web (Carroll et al., 2003). According to Carroll et al. (2003), when young people in Australia set out to acquire a new mobile phone they look for the most appealing handsets, and the services that cost the least and are easily manageable.

In a study from Singapore, it was reported that mobile

phone users, including youth consider social factors such as the uses and appearances of mobile phones as the main factors that influence their adoption (Teo and Pok, 2003). Pagani (2004) found that youth in Italy and the USA considered a number of factors during their adoption of mobile multimedia services, including mobile phones and these included: perceived usefulness, perceived ease of use, cost and speed of the network service. It has also been reported that mass adoption of 3G mobile phones amongst a study of users in Taiwan, who included youth, was connected to the perceived utility of a new technology, the perceived utility of a new service and the perceived utility of a new handset (Teng et al., 2009). Clearly, the literature cited earlier suggests significant contrasts in the ways that youth in various countries adopt mobile phones, including the reasons for doing so.

Research conducted in the global South also presents varied and similar findings to those in the global North. For example, in a study conducted among youth aged between eighteen and thirty-five in South Africa, it was found that the most prevalent factors considered by youth during mobile phone adoption were perceived ease of use for those who were technologically savvy, actual usage for most of the participants, and technological advancement for those who had owned a mobile phone before (van Biljon and Kotze', 2007). In other African rural communities such as in Rwanda, the sharing of mobile phones in a household setting comprising members of the same family or close relatives is reported because in most cases the devices were considered expensive for individual ownership (Donner, 2008).

This sharing of a mobile phone handset by several members in a household as indicated in Donner's (2008) study, is associated with the lack of income for each individual to buy a mobile phone. In Burkina Faso, where mobile phones are also considered expensive to purchase, those that cannot afford them have options to buy cheap low-end and used mobile phones that are imported from France and the United Arab Emirates (Hahn and Kibora, 2008). Other researchers such as Meso et al. (2005) point to accessibility and reliability of mobile phone handsets as the main factors that influence the adoption of the devices by users in countries such as Kenya and Nigeria.

Generally, the literature noted in this section points to three distinctive categories of factors that influence mobile phone adoption amongst youth, these being the personal, demographic, and facilitating factors. The personal factors include preferences, personal gratifications, image, fashion and usage. The demographic factors include income, gender and age; and the facilitating factors include life conditions connected to socio-economic contexts such as access to network signals, and access to network service. Whereas both the personal and demographic factors are mainly identifiable in studies conducted in the global North such as in

Australia (Carroll et al., 2003), Italy, USA (Pagani, 2004) and Singapore (Teo and Pok, 2003), facilitating factors are prevalent in the global South such as in Rwanda (Donner, 2005), Burkina Faso (Hahn and Kibora, 2008) and South Africa (van Biljon and Kotze', 2008).

Nevertheless, Donner (2008) notes that despite these factors, youth in global South region regard the adoption and use of mobile phones as critically significant in their lives. This indicates that to reconstitute the study understanding of young people's interaction with mobile phones, more studies are needed from under-researched societies where youth's life styles are inextricably linked with distinct local cultures and socio-economic challenges. In particular, urban youth in Botswana offer an interesting case for study because their lives are supported by traditional values and principles entrenched in the Setswana custom (Mogapi, 1992).

Moreover, the lives of youth in Botswana are impacted by unique socio-economic challenges such as unemployment (Siphambe, 2003), crime (Balogi, 2004) and poverty (Greener et al., 2000), most of which are specific to young people in the global South.

### Research question

The overarching aim of this study is to investigate the adoption the factors that influence mobile phone adoption among urban youth in Botswana. During the course of this article, the focus is on the traditional lifestyles and socio-economic circumstances of youth to examine how these have influence the need for youth to adopt mobile phones. The specific objectives of the study are as follows:

1. To consider mobile phone adoption among urban youth in Botswana.
2. To identify the factors that influence mobile phone adoption among urban youth in Botswana.

To achieve these aim and objectives, this study sought answers to the following research question:

RQ: What factors influence mobile phone adoption among urban youth in Botswana?

### METHODOLOGY

This study is qualitative and its nature is exploratory. Methods of data collection included semi-structured interviews and focus group discussions. The participants for the study included urban youth aged between eighteen and twenty-five who lived in Francistown and Gaborone. Students and non-students who were randomly targeted at shopping malls and local colleges were included, and then invited to participate in the study. The decision to focus this study on youth is based on the fact that youth constitutes a transitional stage between teenage and adulthood. As such, research of the adoption of mobile phones among youth in

Botswana can provide an insight into the adoption of mobile phones in Botswana by the general population.

In each city, stratified sampling was done to obtain the final thirty participants who owned and used a mobile phone. Ideally, the strata groups were meant to ensure that there was equal representation of males and females, a spread between the ages of eighteen and twenty-five, and a combination of students and non-student participants. One focus group discussion was held with ten participants in each of the two cities, and the remaining ten participants were invited to participate in semi-structured interviews. Both the focus groups and semi-structured interviews were audio recorded and latter transcribed. Questions asked during interviews sought to investigate issues around mobile phone adoption in the contexts of Botswana youth such as, factors that influence them to adopt the devices, their interactive relationship with the devices as well as their consumption of the devices.

### RESULTS AND DISCUSSION

Although mobile phone adoption is primarily influenced by the need for connectedness, there are other factors that shape the adoption process among youth. According to van Biljon and Kotze` (2007), who studied mobile phone adoption among youth in South Africa, other factors such as social influence and gender are identified as important elements that influence mobile phone adoption by youth in South Africa. The current study reveals that, in the context of Botswana youth, there are primarily two types of mobile phone adoption: initial adoption and continuous adoption. During initial adoption, young people are normally enthusiastic about the consumption of the mobile phone, such as its basic function, as demonstrated in the section above, to offer them broad connections with other users. Factors such as the need for connectedness and income play a significant role in determining mobile phone adoption at this stage. Continuous mobile phone adoption involves users acquiring more than one handset or replacing a damaged, old or stolen handset with a newer or advanced one. Often, this is dependent upon the new ways in which the user perceives or makes sense of the functionality of the device. At this stage, the factors such as social influence and perceived usefulness of the device play a significant role in motivating young people to continuously adopt a mobile phone.

#### The need for connectedness as an integral motive for mobile phone adoption

Essentially, the factors that influence and shape youth adoption of mobile phones are important indicators in the adoption process. According to Caron and Caronia (2007), factors such as the relationship between the user and technology, and the functional role that the technology plays in the user's usual routine are of considerable pertinence in the adoption process. During the study, young people in Botswana indicated that overall, the need for connectedness was the integral

motive that influenced mobile phone adoption in their lives. Clearly, among youth in Botswana, a specific driver for the uptake of mobile phones was grounded in their local cultural customs related to connectedness among families, relatives and associates. In this regard, the specific examples of connectedness which were mentioned by youth participants and their parents in the study were as follows: young people connecting with their family and relatives for social support; adolescents connecting with their aunts and uncles for advice on issues of adulthood such as relationships; students connecting with their classmates in colleges for assistance on issues that pertain to studying; and young people in the workplaces connecting with their colleagues and customers on matters related to their businesses.

In particular, young people in Botswana are raised in traditional lifestyles that require them to always connect with their families, relatives and other people in their communities. Despite this, and as part of their contemporary lifestyles young people must often live apart from their loved ones due to the need to migrate to the towns and large villages to undertake new occupations such as attending secondary school, attending college and university, and taking up employment. Because of the distance between them and their loved ones, there is a need to re-establish their traditional values and principles of linking up, checking on and taking care of each other, from time to time. Also, as part of their new lifestyles in the towns and large villages, they make new connections with other people who they sometimes need to contact. As this study has revealed, in most cases the mobile phone has become the most significant device to facilitate these connections. In this regard, young people in Botswana celebrated the relevance of the mobile phone for connection through personalised communication such as voice calls, text messaging and mobile online social networks.

Consider the following extract that came out during an interview with Refilwe<sup>1</sup> (22), when she revealed the benefit of adopting the mobile phone to connect with her mother and daughter:

I come from Maun, where my one-year-old daughter lives with my mother. Since Maun is about 900 kilometres from Gaborone where I stay, it has been difficult for me to travel there every week. Nonetheless, I have bought my mother a mobile so that sometimes I may call her from it to check on my daughter. Especially as my mother does not have a fulltime paid job and doesn't have money to buy airtime, she usually sends me text messages to update me about my baby's wellbeing.

Some of the young people stayed far away from their parents and grandparents such that it was costly to visit them. According to the participants in the study, they thus

found solace in the mobile phone. This is illustrated in the following accounts offered by two young people during the study:

My father and mother live alone at the farms where there are no facilities such as shops, clinics and landline fixed telephones. However, the mobile network signal is adequate there. As a result, I bought them a mobile phone so that we can always be connected (Neo, 24, female).

I bought myself a mobile because I wanted to be connected with my relatives and friends who live in Jwaneng (Jwaneng is located about 600 kilometres from Francistown where he lived and worked) (Joel, 25, male).

As indicated in the findings, at some point in life young people in Botswana migrate to towns where there are many opportunities for better livelihoods. Also, as part of their traditional upbringing, it is expected that once they arrive there, and when they find jobs they should support their families. This involves taking care of their parents and grand parents, and occasionally checking on them. It is traditionally held that embracing Setswana traditional values guarantees young people long life, as well as strong affection and favour with their relatives (Makgeng, 2000; Mogapi, 1992). Hence, for many youth in Botswana, the mobile phone serve as the most appropriate device that help them re-ensconce their traditional way of life, especially in situations when their modern livelihoods compel them to live separately from their family and relatives.

### **Influence of income on young people's adoption of mobile phones**

During the study, disparities were observed with regard to the type of devices that non-student participants owned compared to student participants. Most of the non-student participants owned smart phones, such as Blackberry, Sony Xperia and Nokia Lumia, while a majority of student participants owned simple, cheaper models and others used counterfeit<sup>2</sup> smart phone devices. As the study pointed out earlier, the interviews with the non-student participants revealed that they received the smart phones from their workplaces, and these were useful to help them perform daily tasks at their workplaces, such as accessing emails during and after work.

1. All the participants cited in this article were given pseudonyms as was agreed with them during the study that their identities will not be revealed in publications that came out from the study.

2. Counterfeit smart phones are faked brands that are commonly found in some shops in Botswana that sell imported products from overseas countries, especially China. Most of these devices are often not certified through international standards. Although counterfeit devices are considerably cheaper than original brands, and many young people in Botswana use them, they are often not certified according to international standards, and are considered by young people as undependable and hazardous to health.

Interviews with student participants revealed that they kept to cheaper handsets that were useful for basic mobile communication since they could not afford to buy expensive ones. This is because they received little stipend from their academic sponsors. Consider the following remarks that came out during interviews:

I am not satisfied with my mobile, but I don't have a choice since I don't have money to buy a smart phone. My mobile is simple and doesn't have many features. However, I intend to buy myself a Blackberry once I get a job after I complete my studies (Kefilwe, 20, female, Francistown).

Smart phones are expensive yet one needs to perpetually buy and load airtime to keep their mobiles functional. So, I feel that it is best I keep to a basic phone so that I can save money to buy prepaid airtime to recharge it at times. It may be cheap but it is still useful (Ofentse, 18, male, Francistown).

During the focus groups, other student-participants pointed out that used and counterfeit smart phone handsets are more costly (they cost around US\$300) than basic mobile phone handsets sold in many stores in Botswana. Consequently, the student participants who used counterfeit smartphones concurred that they had saved for them for several months from their stipends.

The viewpoints of participants in the study suggest that the choices regarding the type of mobile phone handset that each young person owned and used was dependent on the amount of income. Mostly, youth in Botswana who have income support, such as from workplaces (non-student participants), and those who have access to a stipend from academic sponsors (such as student participants), adopted smart phones whereas those who do not have such privileges adopted basic mobile phones.

### **Social influence and perceived usefulness of mobile phones as motivating factors during mobile phone adoption**

During the study fieldwork, twelve student participants in the study admitted to swapping simple and cheaper mobile phones that they had initially bought when they received their first stipend to a more advanced handset. According to the participants, when they saw other people with smart phone handsets with digital cameras and advanced features for playing music, their attitude towards basic mobile phone handsets changed, since they now started to envy advanced handsets. Although the participants lamented that swapping a basic brand for a smart phone was costly, it appeared that at this stage the social influence of others surpassed the cost of acquiring the latest handset or a smart phone device. For

instance, Nay (22), a third year university student had a Samsung Galaxy S4. It cost \$600, almost the price of a laptop computer. He managed to buy this phone after saving for about seven months from his stipend. Nay admitted that before he bought this phone, he admired a similar smartphone that his uncle, who has a high paying job, used. Six other young people in Botswana also pointed out how they were persuaded to buy their smart phones after seeing advertisements about them and their functionality. Consider the following excerpts from focus group interviews:

I once owned a simple Nokia handset. I considered it nice and unique. However, after realizing that most of my friends owned smartphones that can play music and take photos, I bought myself a Blackberry Bold (Mpho, 24, female, Francistown).

My first mobile was a Nokia 5100, but last month I bought myself a Samsung Galaxy Pocket after seeing it on the shop shelf some weeks before. It looks fashionable and my friends envy it (Thero, 21, male, Gaborone).

In addition to social influence towards adopting specific mobile phone handsets, Mpho and Thero's remarks also demonstrate that the significance of mobile phones to young people in Botswana also includes a more illustrative interactive relationship between the user and peers. To some degree, this indicates that other users, such as the early adopters of the mobile phones, influence the adoption of latest handsets among some sections of youth in Botswana.

This study also revealed that many young people in Botswana related their mobile phone adoption to the context of how they wanted to use the devices. The interviews with young people revealed that they all wanted to own devices that were useful for various forms of mobile media and communication services. These included making voice calls, sending and receiving text messages, conducting social networking, accessing mobile Internet, exchanging digital photographs and videos, and playing mobile games. Consider the following remarks that came out during semi-structured interviews with some young people in this study:

Unlike my previous mobile phones, my new Samsung Galaxy S4 is useful to access Facebook, Skype, MP3 music, videos and the Internet. I access and check online updates for my online classes and also research through Google (Nay, male, Gaborone).

Although I first owned a simple Nokia 1280 to connect to my family at home, I acquired this S3 mini because I wanted a handset that could also connect me with my friends overseas through social networks (Gorata, 19, female, Gaborone).

While also discussing this with participants during the

study, the students pointed out that the counterfeit smartphones were useful for them to access mobile Internet, because access to fixed Internet was often inadequate in their school premises. The Internet accessed through mobile handsets was useful as part of their studies.

## CONCLUSION

Overall, this study has sought to explore the factors that influence mobile phone adoption among urban youth in Botswana. The findings of this study have indicated that there are similarities and differences in the way that urban youth in Botswana, and their counterparts in other countries, adopt and consume mobile phones.

Specifically, this study demonstrated that for urban youth in Botswana the need for connectedness and income were the most predominant influential factors during mobile phone adoption among youth. Other factors such as perceived usefulness and attractiveness of the device were secondary; as these were only considered during continuous adoption, particularly after a young person has already owned his or her first mobile phone handset and considered changing to a different one. Analogous to the practices of youth in the economically developed countries, such as the UK (Davie et al., 2004), Italy and the USA (Pagani, 2004) mobile phone adoption and consumption among youth in Botswana has been influenced by the perceived usefulness of the handsets.

As is the case with other young people in Singapore (Teo and Pok, 2003), South Korea (Leung and Wei, 2000) and Australia (Carroll et al., 2003), young people in Botswana have strategically adopted smartphones through which they access mobile Internet. Nonetheless, in the context of Botswana youth mobile phone adoption in this regard occurs due to both the lack of income to buy computer devices to access the Internet, as well as inaccessibility of the Internet in their homes and colleges. The significance of income as demonstrated in this study underscores the viewpoint by Ling and Helmersen (2000) that young people adopt mobile phones that they can afford. One very distinct finding from this study is the influence of cultural lifestyle to mobile phone adoption. As this study has shown, the need to connect has been motivated by the requirements to uphold the traditional values and principles in Setswana culture, whereas a lack of income is due to the challenges of poverty and unemployment. Clearly then, in each society mobile phone adoption among youth is primarily associated with young people's traditional lifestyles and the socio-economic challenges that they face. No doubt this underscores the significance to undertake other related studies to include many participants from various cultural backgrounds. Conceivably, such studies could yield varied results which can also inform and reshape our understanding of mobile phone adoption among youth globally.

## Conflict of interests

The author has not declared any conflict of interests.

## REFERENCES

- Axelsson AS (2010). Perpetual and personal: Swedish young adults and their use of mobile phones. *New Media Soc.* 12(1):35-54. doi: 10.1177/1461444809355110
- Balogi KTO (2004). At the Cross roads: Family, Youth Deviance and Crime Control in Botswana. *Pula: Botswana J. Afr. Stud.* 18(1):77-87. doi: <http://hdl.handle.net/10311/895>
- Bond E (2010). Managing mobile relationships: Children's perceptions of the impact of the mobile phone on relationships in their everyday lives. *Childhood.* 17(4):514-529. doi: 10.1177/0907568210364421
- Caron AH, Caronia L (2007). *Moving Cultures: Mobile Communications in Everyday Life.* Montreal & Kingston: McGill-Queens' University Press.
- Carroll J, Howard S, Peck J, Murphy J (2003). From adoption to use: The process of appropriating a mobile phone. *Aust. J. Inform. Syst.* 10(2):38-48.
- Chabossou A, Stork C, Stork M, Zahonogo Z (2009, 17-19 April 2009). Mobile telephony access and usage in Africa. Paper presented at the Information and Communication Technologies and Development (ICTD), 2009 International Conference.
- Chu WL, Wu FS, Kao KS, Yen DC (2009). Diffusion of mobile telephony: An empirical study in Taiwan. *Telecomm. Policy.* 33(9):506-520. doi: <http://dx.doi.org/10.1016/j.telpol.2009.07.003>
- Davie R, Panting C, Charlton T (2004). Mobile phone ownership and usage among pre-adolescents. *Telematics. Inform.* 21(4):359-373. doi: 10.1016/j.tele.2004.04.001
- Donner J (2005). The social and economic implications of mobile telephony in Rwanda: An ownership/access topology. In: P Glotz, S Bertschi, C Locke (Eds.), *Thumb culture: The meaning of mobile phones for society* (pp. 37-51). New Brunswick, NJ: Transactions.
- Donner J (2008). Research Approaches to Mobile Use in the Developing World: A Review of the Literature. *Inform. Soc.* 24(3):140-159. doi: 10.1080/01972240802019970
- Duncan J (2013). Mobile network society? Affordability and mobile phone usage in Grahamstown East. *Commun.* 39(1):35-52. doi: 10.1080/02500167.2013.766224
- Duncombe R, Boateng R (2009). Mobile phones and financial services in developing countries: a review of concepts, methods, issues, evidence and future research directions. *Third World Q.* 30(7):1237-1258. doi: 10.1080/01436590903134882
- Goggin G (2013). Youth culture and mobiles. *Mob. Media. Commun.* 1(1):83-88. doi: 10.1177/2050157912464489
- Greener R, Jefferis K, Siphambe H (2000). The Impact of HIV/AIDS on Poverty and Inequality in Botswana. *S. Afr. J Econ.* 68(5):393-404. doi: 10.1111/j.1813-6982.2000.tb01284.x
- Haddon L (2008). Young people's diverse use of multimedia mobile phones. Paper presented at the International Communications Association, 'Communicating for Social Impact, Montreal.
- Hahn HP, Kibora L (2008). The domestication of the mobile phone: oral society and new ICT in Burkina Faso. *J. Mod. Afr. Stud.* 46(01):87-109. doi: 10.1017/S0022278X07003084
- James J (2012). Which developing countries have done the most to close the digital divide? *Telematics. Inform.* 29(2012):2-10. doi: 10.1016/j.tele.2011.05.003
- Kalba K (2008). The adoption of mobile phones in emerging markets: Global diffusion and the rural challenge. *Intl. J. Commun.* 2:631-661.
- Karim NSA, Alias RA, Mokhtar SA, Rahim NZA (2009). Mobile phone adoption and appropriation in Malaysia and the contribution of age and gender. Paper presented at the ICIMT '09. International Conference on Information and Multimedia Technology.
- Leung L, Wei R (2000). More Than Just Talk on the Move: Uses and Gratifications of the Cellular Phone. *J. Mass Commun. Q.* 77(2):308-320.
- Ling R (2004). *The Mobile Connection: The Cell Phone's Impact on Society.* Amsterdam: Morgan Kaufmann Publishers.

- Ling R, Helmersen P (2000). "It must be necessary, it has to cover a need": The adoption of mobile telephony among pre-adolescents." Paper presented at the The Social Consequences of Mobile Telephony, Oslo, Norway.
- Lull J (2001). Super culture for the communication age. In: J Lull (Ed.), Culture in the communication age (pp. 132-163). London: Routledge.
- Makgeng MRT (2000). Tshedimosetso ya Setswana. Gaborone: Botsalano Books.
- Meso P, Musa P, Mbarika V (2005). Towards a model of consumer use of mobile information and communication technology in LDCs: the case of sub-Saharan Africa. *Inform. Syst. J.* 15(2):119-146. doi: 10.1111/j.1365-2575.2005.00190.x
- Miyaki Y (2006). Keitai Use among Japanese Elementary and Junior High School Students. In: M Ito, D Okabe, M Matsuda (Eds.), Personal, Portable, Pedestrian: Mob. Phones in Jpn. Life. pp. 277-299. London: The MIT Press.
- Mogapi K (1992). Ngwao ya Setswana. Gaborone: Longman.
- Pagani M (2004). Determinants of adoption of third generation mobile multimedia services. *J. Interact. Mark.* 18(3):46-59.
- Peters O, Allouch SB (2005). Always connected: a longitudinal field study of mobile communication. *Telematics. Inform.* 22(3):239-256. doi: 10.1016/j.tele.2004.11.002
- Roberts GK, Pick JB (2008). Technology Factors in Corporate Adoption of Mobile Cell Phones: A Case Study Analysis. Paper presented at the Hawaii International Conference on System Sciences Big Island, Hawaii.
- Sife AS, Kiondo E, Lyimo-Macha JG (2010). Contribution of mobile phones to rural livelihoods and poverty reduction in Morogoro region, Tanzania. *Electronic J. Inform. Syst. Dev. Ctries.* 42(3):1-15.
- Siphambe HK (2003). Understanding unemployment in Botswana. *S. Afr. J. Econ.* 71(3):480-495. doi: 10.1111/j.1813-6982.2003.tb00082.x
- Skog B (2001). Mobiles and the Norwegian teens: Identity, gender and class. In: JE Katz, M Aakhus (Eds.), Perpetual contact: Mobile communication, private talk, public performance pp. 255-273. Cambridge: Cambridge University Press.
- Teng W, Lu H-P, Yu H (2009). Exploring the mass adoption of third-generation (3G) mobile phones in Taiwan. *Telecomm. Policy.* 33(10):628-641. doi: <http://dx.doi.org/10.1016/j.telpol.2009.07.002>
- Teo TSH, Pok SH (2003). Adoption of WAP-enabled mobile phones among Internet users. *Omega* 31(6):483-498. doi: <http://dx.doi.org/10.1016/j.omega.2003.08.005>
- Tsai M (2012). The trends and adoption behaviors of smart phones in Taiwan: A comparison between persons over 45 years of age and youth under 25. Paper presented at the Technology Management for Emerging Technologies (PICMET), 2012 Proceedings of PICMET '12:.
- Van Biljon J, Kotze' P (2007). Modelling the factors that influence mobile phone adoption. Paper presented at the Proceedings of the 2007 annual research conference of the South African institute of computer scientists and information technologists on IT research in developing countries, Port Elizabeth, South Africa.
- Van Biljon J, Kotze' P (2008). Cultural Factors in a Mobile Phone Adoption and Usage Model. *J Univers. Comput. Sci.* 14(16):2659-2679.