

# Usage Patterns of Mobile Phones amongst University Students in Kenya

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**Abstract:** *Given the significant impact the wireless technologies provided to date, not many research can be found conducted in understanding the pattern of wireless use and adoption among various cohorts of the Kenyan population particularly those of university students. This research conducted in order to find out about the pattern of wireless technologies' adoption and use among University students in Kenya. Subsequently, this study is expected to establish an understanding of the usage patterns based on the adoption/appropriation of technology perspective. This study should provide a very important contribution to the understanding of university students and their mobile phone use behavior. At the same time, this study can also assist in policy development of wireless phone application among university students and allows for respective authority to re-think of how to exploit the technology to benefit the youth for the purpose of learning and motivation. In addition, the findings may also contribute to the modeling of mobile phone use as a strategy to match mobile phone design to user's technological needs and expectations.*

**Keywords:** Adoption, Appropriation, Information Technology and youths, Wireless Technology Application, Usage

## 1. Introduction

With the extensive adoption of mobile phone across regions of the world and the subsequent adoption studies as well as the day to day technological success in the mobile phone technology, researchers are confronted with numerous issues and perspectives in seeking to understand the behavior of the users of such technology. Several approaches have been used including the classical theory of technology adoption and acceptance model (Karim et al., 2010)

Evidences from the literature have indicated that very little research was conducted in identifying the patterns of wireless phone usage, and the researches on wireless technology users based on the adoption and appropriation model are also found scarce worldwide. The choice of university students as the focus of the study is seen as important due to phenomenal impact and growth of utilization among this cohort group, which is hardly understood due to limited amount of research done in this area.

The research will provide a significant contribution to the understanding of university students and their communication behavior using wireless technologies. Given that these students are heavy users of such technology, it is important that this understanding can be transformed into various policies and development that exploit the technologies to their advantages such as mobile learning, mobile counseling, etc. rather than leaving them for freelance use for their negative impacts. Most importantly, this research should also allow for the modeling of wireless technology behavior that can be repeated among other Kenyan cohorts such as elderly, women, youths, rural community, etc. Consequently, the model can be used as a strategy to match mobile phone design to user's technological needs and expectations.

## 1.1 Research questions

Accordingly, the research seeks to answer the following research questions: What are the patterns of usage of mobile phone and adoption among the Kenyan university students? What are the intrinsic and extrinsic motivational factors that influence their use and appropriation of mobile phone?

## 2. Literature Review

Mobile technologies, particularly mobile phones and text messaging, have been widely adopted by young people and integrated into their everyday lives (Carroll et. al. 2002b). This includes Kenyan young people. In Kenya, the penetration rate of mobile phone as of first quarter of 2013 is 76.9% (CCK, 2014).

While Technology Acceptance Model (TAM) has been extensively cited in wireless or mobile phone research, newly found model such as technology appropriation model of mobile phone use is also gaining acceptance in explaining the mobile phone use phenomena (Wirth et.al., 2008). In this regard, appropriation refers to the use of the technology as designed by the designers to satisfy different purposes beyond the conception of the designer (Carroll et.al, 2002a), (Carroll et. al., 2002b). Appropriation signifies how the technology is used, adapted, and fitted in the users' daily activities. Therefore, using the appropriation approach, we can shade more light on mobile phone usage more meaningfully through how the technology is used, the purposes it serves, and the context in which it is used through choice of features and services (Karim & Iyafolahan, 2009)

The motivation theories have been used to understand individuals' IT acceptance behaviors [(Kwon & Chidambaram, 2000), (Shang, Chen, & Shen, 2005), (Hsu & Lu, 2004) in Karim et al., 2010]. Most of the work that has been conducted using TAM was based on extrinsic motivation perspective [(Moon & Kim, 2001), (Tan & Chou, 2007) in Karim et al., 2010]. Thus in this study, it is sought

to explore university students' usage of mobile phones examining both intrinsic and extrinsic motivators to better understand this area. Intrinsic and extrinsic types of motivation have been widely studied, and the distinction between them has shed important light on both developmental and educational practices (Ryan & Deci, 2000). The research framework used for this study is the extrinsic and intrinsic motivation to explain university students' mobile phone appropriation.

### 3. Methodology

#### 3.1 Population and Samples

This research used the quantitative survey approach on the target population. The target population of this study is student users of mobile phones in Kenyan universities aged 19 to 25 years old. After the pre-testing stage, a modified questionnaire was developed for the purpose of conducting a pilot study. Subsequently, the questionnaires were refined and rephrased accordingly. Out of 250 questionnaires that were distributed, 200 questionnaires were usable for further analysis.

#### 4. Findings

The data comprised of 100 percent mobile users among university students and distributed into 55% male and 45 % female; a well distributed age groups from 19 to 25. Most of the users (77 %) spent 1-3 minutes to make their calls and spent about KShs. 100 – KShs. 300 on their average monthly expenditures. 93% of the students used prepaid as their method of subscription, and about 60 % used Nokia as their preferred phone brand, followed by Samsung and other brands. The findings also indicate how students are a bit different from adults in terms of how they use the technology. Facilitating social interactions and entertainment have been the major reasons for university students dependency on their mobile phones and devices.

Based on the top eight extrinsic motivations measured, majority of the students used the mobile phone due to: I

would find mobile phone useful in my daily life (98% agree and strongly agree); Using mobile phone would make my daily life easier (97.5%); Using mobile phone is compatible with every aspect of my life as a student (92.5%); using mobile phone fits well with the way I live my life (study/work) (90%); Using mobile phone would improve my academic work/study (88%); Using mobile phone in my daily life would enable me accomplish my work/study more quickly (82.5%); Using mobile phone in my daily life would increase my productivity (79%); Using mobile phone would improve my academic work/study performance.; using mobile phone would enhance my effectiveness in my daily life (75%).

Based on the top eight intrinsic motivation measured, these are: Using mobile phone stimulates my curiosity (100% agree and strongly agree responses); Using mobile phone enables me increase social interactions (99.5%); Using mobile phone enables me to maintain cohesion within family and friendship groups (98.5%); using mobile phone arouses my imagination (98.5%); Using mobile phone reduces my loneliness and anxiety (97.5%); Using mobile phone leads to my exploration (97.5%); Using mobile phone gives me fun and enjoyment (87%); when interacting with mobile phone, I do not realize the time elapsed; When interacting with mobile phone, I am not aware of any noise (82.5%); Using mobile phone reinforces my sense of existence (80.5%) and Using mobile phone promotes a sense of security and well-being in me (79.5%).

Performing principle component analysis provides a revised scale for both extrinsic and intrinsic motivation factors to the use and appropriation of the mobile phone. Table 1 provides the revised items used for measuring extrinsic and intrinsic motivation. Further analysis using a stepwise regression technique indicates strong and significant relationship between both extrinsic and intrinsic motivation with mobile phone use and appropriation. The findings indicate significant relationship between different mode of use or appropriation with various different motivational factors.

Table 1: Extrinsic Factors

Items	Mean	Std. Dev.	Factor loading
<b>Extrinsic Factor 1 – Performance Expectancy (<math>\alpha=0.898</math>)</b>			
Using mobile phone would improve my academic work/study performance	2.76	0.996	.752
Using mobile phone in my daily life would enable me accomplish work/study more quickly	3.64	1.256	.715
Using mobile phone in my daily life would increase my productivity	3.16	1.005	.701
Using mobile phone increases my effectiveness on school work/study	3.18	1.113	.517
Using mobile phone would enhance my effectiveness in my daily life	3.77	1.148	.349
<b>Extrinsic Factor 2 - Compatibility with the life of a student (<math>\alpha=0.634</math>)</b>			
I would find mobile phone useful in my daily life	3.72	1.016	.706
Using mobile phone fits well with the way I live my life(study/work)	3.81	1.081	.653
Using mobile phone would make my daily life easier	3.84	1.013	.626
Using mobile phone is compatible with every aspects of my life as a student	3.21	.945	.260
<b>Extrinsic Factor 3 – Relative advantage (<math>\alpha=0.844</math>)</b>			
Using mobile phone reduces the quality of school work I do(reverse)	3.12	1.027	.822
Using mobile phone makes it difficult to do my school work (reverse)	3.25	1.124	.951

Table 2: Intrinsic Factors

Item	Mean	Std.Dev.	Factor loading
<b>Intrinsic Factor 1 – Social And Emotional Well Beings (<math>\alpha=0.699</math>)</b>			
Using mobile phone enables me to maintain cohesion within family and friendship groups	3.99	1.033	.677
Using mobile phone enables me to increase social interactions	3.65	1.008	.600
Using mobile phone reduces my loneliness and anxiety	3.46	1.034	.385
Using mobile phone promotes a sense of security and well being in me	3.28	0.962	.354
Using mobile phone gives me fun and enjoyment	3.32	.932	.264
<b>Intrinsic Factor 2 – Curiosity (<math>\alpha=0.265</math>)</b>			
Using mobile phone arouses my imagination	3.18	0.982	.619
Using mobile phone leads to my exploration	3.72	1.089	.559
Using mobile phone stimulates my curiosity	3.66	1.096	.589
Using mobile phone reinforces my sense of existence	3.52	1.118	.313
Using mobile phone increases my feeling of freedom	3.35	1.091	.218
Using mobile phone makes me happy	3.61	1.051	.252
<b>Intrinsic Factor 3 - Satisfaction with life (<math>\alpha=0.465</math>)</b>			
So far I have gotten the important things I want in life with the use of mobile phone	3.17	1.012	.460
I am satisfied with my life with the use of mobile phone	3.79	1.400	.989
The conditions of my life are excellent with the use of mobile phone	3.20	1.035	.613
In most ways my life is close to my ideal with the use of mobile phone	3.48	1.089	.489
<b>Intrinsic Factor 4 – Concentration (Flow Experience) (<math>\alpha=0.949</math>)</b>			
When interacting with mobile phone, I do not realize the time elapsed	3.25	1.104	.945
When interacting with mobile phone, I often forget the work I must do	2.69	1.097	.843
When interacting with mobile phone, I am not aware of any noise	2.97	1.145	.852

## 5. Conclusion

This study was carried out in an attempt to understand the behavior of mobile phone users among university students. From the findings it is seen that users not only adopt the technology for simple use, but they are actually appropriating the technology according to their lifestyle and individual needs. In fact some patterns can be found in this use and appropriation concept based on different cohort groups. The findings brought to the fore very insightful information with much to learn about students' use and appropriation of mobile phone and how much such use are influenced by motivational factors.

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