Effects of Mobile Phone Withdrawal, Gender and Academic Level on Mobile Phone Dependency Among Mass Communication Students in Ajayi Crowther University, Oyo, Oyo State, Nigeria

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Abstract

Noticeable among young adults in Nigeria is their dependence on mobile phone for relational communication. This study is therefore one attempt at subjecting such observation to empirical testing. The study examined the effects of Mobile phone withdrawal, gender and academic level of students' dependency on mobile phone. It was a quasi-experiment with 2×2×2 non-randomized pre-test post-test control group designs. Subjects in experimental and control groups were 100 and 400 level Mass Communication students of Ajayi Crowther University in Oyo, Oyo State, Nigeria. Students' Mobile Phone Dependency Questionnaire(r=0.72) was administered as pre and post-test measures. Data generated were analysed with frequency count, percentage, t-test and Analysis of Covariance. Findings show that 55% of the students used their phones 'very frequently', 30% used it 'frequently'. Before the intervention, students' dependency on mobile phone was 'moderate' (60.8%) but after the treatment, there was upward adjustment 'High' (45%). Statistical significant difference was found between students' dependency pre-test and post-test scores in favour of the post-test (t= -5.665; p<0.05). Treatment (F= 3.832; p<0.05) and academic level (F= 12.185; p<0.05) were found to have significant main effects. Hence, the study concluded that students are actually dependent on their mobile phones and that, in considering and controlling mobile phone dependency, students' academic level is a potent factor.

Key words: Media dependency； Mobile phone；Phone withdrawal Gender； Academic level

INTRODUCTION

Mobile phone has metamorphosed from being a business tool to a personal communication device. The adoption of this modern device and its growth has been observed to correlate positively and highly with the rate of dependence on it. The device has also graduated from the level of being a status symbol to a tool of apparent necessity. This is because the new generation

of mobile phones are not just for talking; they are loaded with facilities for multi-media messaging, and Internet access. According to Elliot and Urry (2010), the pervasiveness of its usage has been linked to the mobile lifestyle of the modern society. The young adults are at the forefront as far as adoption as cell phone innovation is concerned. Their interest and uncontrolled passion for sophisticated cell phone are connected with their activities such as gamming, messaging, music and Internet access.

Generally, the young people have placed unprecedented priority on almost minute-to-minute communication with friends, relations and acquaintances. As such, much of their energy is dissipated on cultivating digital relationship with people because it is fast and controllable. In fact, cell phone has become a useful relational maintenance device, not only for the youth population but also for all segment s of the global population. The use of mobile phone is variegated. According to Rich and Ling (2003) the mobile technology has fundamentally affected our society, accessibility, safety, security, coordination of social and business activities.

Since its introduction to Nigeria in 2001, mobile phone has become a powerful tool for communicating across the country among young and old people. While the old people have used it for voice communication, the young people have adopted SMS as a major way of socialising and maintaining relationships (Taiwo, 2010). As people adopt this new mobile innovation, in turn, the technology also evolves based on the demands of its users. With the knowledge of the fact that the mobile phones that are around these days have a lot of functions which make life easy, it I s not a surprise that a large segment of the global population haa become dependent on it. According to BBC news, a survey shows that more than 90% of UK mobile phone users cannot get through the day without using their phones. Among younger users, 9% admitted being addicted to their phones. As survey of Indian mobile phone users also indicates that 42% admitted they could not live without it while 60% reported never leaving home without their phones (Rao & Desai, 2008).

As mobile phone users vary, so also is the variation in terms of their attitude and dependence on it. The indication is that as the days go by people get more and more dependent on the device. Particularly, observations have shown that a lot of university undergraduates in Nigeria depend on the device even for as little as simple arithmetic calculation and for other conventional uses. The growing dependence of the young people on the device raises serious concern about the negative and far-reaching implications of such trend. In spite of the mounting concern, there is dearth of serious empirical studies addressing this issue in Nigeria. Also, there is a critical need to build a body of literature of contextual relevance to Nigeria situation. This constitutes the focus of this study.

1. YOUTHS, CELL PHONE AND MEDIA DEPENDENCE

New media technologies have become embedded into our daily lives. This according to Yoonwhan (2009) is because we are living in an ever-changing new media environment in which people and media interact and influence each other in various and profound ways. This symbiotic relationship between people and the new media technology can be explained using media system dependence theory. (Ball-Rokeach et al., 2003). In a study of 200 undergraduates of the university of Maryland in which the students were asked to go media –free (abstinence) for 24 hours, it was found that: (i) the way students consume media is related to 'material concerns'- that is, the stuff they hav e(iphone, Deriods, ipod e.t.c), (ii) that the portability of the media stuff has changed students' relationship, not just to news and information, but to family and friends; and that (iii) that the feelings of not being connected to the world was among the things that caused anxiety in students. This study has further

highlighted the extent to which people generally, the young adults in particular depend on the new media of communication for survival. The mobile or cell phone is one device that the young people cannot do without. As observed by Elliot and Urry (2010) the cell phone fits into the modern mobile lifestyle, placing individuals in perpetual contact with their network of contacts (Katz & Aakhus, 2002).

Mobile phone is a relational maintenance device for vast segment of the global population. According to BBC news, by 2010 there were five billion connections worldwide and for every computer with an Internet connection, there are three cell phones (BBC news, 2010). However, the practices of mobile phone use have been found to differ among different age groups as well as gender (Baron & Campbell, 2010). While old people in general are favourably disposed to voice call, they are reluctant to adopt texting. Ling (2010) noted that old people use texting for instrumental purposes only. In contrast to old people are the youths who use texting for a variety of purpose. Texting has achieved central position in the youth culture (Bolin and Westlund, 2009). Relational communication characterised pervasive use of mobile phone among young people (Katz & Aakhus, 2002). People rely on mobile phones to plan, share, include and validate (Ling, 2004). According to Baron (2008), although relational communication constitutes the core of cell phone's appeal, it has also become a source of tension. As further explicated, though greatly enjoyed, the expectations of friends to inform, share and maintain relationships via text messaging and voice calls can also lead to feelings of imprisonment and entrapment (Baym, 2010). Many young people now feel strongly dependent on their cell phones and entrapped in it. A study of Mexican youths found that 38% of youths could not spend a day without their phones (Mariscal & Bonina, 2008). A study of Indian mobile phone users also found that 42% of respondents said they could not live without their mobile and 60% reported never leaving home without it. (Rao & Desai, 2008).

Although Nigeria is one of the late adopters of mobile phone technology, the use of it has gone viral in the nation since 2001 when its adoption was made open to all segments of the society. It is a powerful communication device among young and old people. While the old people have used it mostly for voice communication, the young people have adopted texting as a way of socialising and maintaining relationships. This observation is in consonance with the findings of the Pew Research Center's Internet and American Life Project (2010) that ' text messaging has become the primary way the teens reach their friends, surpassing face-to-face contact, email, instant messaging and voice calling'. As further reported, 'teens send 50 or more text messages a day or 1500 texts a month, and one in three send more than 100 texts a day or more than 3,000 texts a month'. This

submission also corroborates the findings of ICMPA and Students at the Phillip Marril College of Journalism that 'young adults today place an unprecedented priority on cultivating an almost minute-to-minute connection with friends and family', noting further, they said, 'much of the young people's energy is going towards cultivating digital relationship with people who could be met face-to-face but oftentimes, the digital relationship is preferred form of contact simply because it is fast and it is controllable'. Evidently, we live in the new media environment and our dependence and interaction with the media is only a reflection of a symbiotic relationship which can be explained best using Media System Dependency Theory perspective (Ball-Rokeach, et al., 2003).

2. MEDIA SYSTEM DEPENDENCY THEORY

The theoretical underpinning for this study is the Media System Theory. MSDT emerged in 1976 from an article written by Ball-Rokeach and Defleur who tried to explain why media could have varying cognitive, affective and psychomotive effect on different people. The explanation eventually evolved into complex theory of dealing with the relationship between media and individuals at the micro level and media and social institutions at macro level (Daniel et al., 2008). The major aim of MSD theory is to explain why mass communication sometimes have powerful and direct effect and at other times has indirect and rather week effect (Defleur & Ball-Rokeach, 1989). At macro level, the theory explicates the interdependencies among audiences, media and society. It attributes media power to the dependency relations created between audiences and society. It highlights the relationships developed with the mass media that in turn predict exposure. The basic assumption is that the more dependent an individual is on a medium for having his or her needs fulfilled, the more important the medium is to the individual (Daniel et al., 2008). Although, individuals depend on media information to meet certain needs and achieve certain goals but individuals do not do not depend on all media equally. According to MSD theory, two factors influence the degree of media dependence. First, an individual becomes more dependent on media that meet a number of his or her needs than a media that provide just a few. The second source of dependency is social stability, when social change and conflict are high, established institutions, beliefs and practices are challenged, forcing individuals to re-evaluate and make new choices. At such times, individual's reliance on the media for information will increase and at other more stable times, individual's dependency on media will go down. The theory posits that individual's needs are not always strictly personal but constantly shapen by the culture or by various social conditions. That is, individual's needs, motives and uses of media are contingent on outside factors that may be outside factors that may be outside the control of such individual. These outside factors act as constraints on what and how media can be used and on the availability of other non-media alternatives. The more alternatives an individual has for needs gratification; the less dependent he or she will become on any single medium. (www.tcw.utwete.nl/theorieoverzicht/)

3. THE PROBLEM

The common belief that many university undergraduates in Nigeria are fast becoming dependent on their mobile phone has its root in the general observation of the level of dependence exhibited by the young adults. However, this remains hypothetical and thus requires the empirical investigation. Are students actually dependent on their phones? What happens if students abstain from their mobile phones for at least eight hours? Will they exhibit the same level of dependence before and after phone withdrawal? Can gender and academic level as single factors have main effects on the level of mobile phone dependence? Will there be any main and interaction effects of the variables on students' level of phone dependence? These are the unique dimensions through which this study addressed the subject matter. In specific terms, the following is the research questions answered.

Research Questions:

RQ 1: How frequent do university undergraduates use their mobile phones?

RQ 2: What is the level of mobile phone dependence among university undergraduates?

RQ 3: Will there be any statistical significant difference in students' dependency on mobile phones before and after treatment.

RQ 4: Will there be any significant main effect of Treatment, Gender and academic level on mobile phone dependence among university undergraduates?

RQ5: Will there be any significant interaction effect of Treatment, Gender and Academic level on mobile phone dependency among university undergraduates?

4. METHOD

The study is a quasi-experiment making use of $2\times2\times2$ non-randomized pre- test-post- test control group design. The two groups involved in the experiment include the treatment (experimental group) and the control group. Two sets of students, (100 levels and 400 levels) in the Department of Communication and Media Studies, Ajayi Crowther University in Oyo constituted the subjects of investigation. 100 level students and 400 level students were selected for ease of comparison, one at the entry point and the other at the exit point of their stay in the university. Intact class approach was adopted. In each

of the academic levels, 30 students who volunteered to participate in the experiment by way of surrendering their mobile phones for 10 hours (8 a.m – 6 p.m) formed the experimental group while 30 students who did not surrender their mobile phones formed the control group. In all, 120 students were involved, 60 students in each of the academic levels. Students in the experimental groups were denied access to their mobile phones while those in the control group were allowed to make use of their mobile phones in their normal usual ways. Before the commencement of the treatment, Students' Mobile Phone Dependency Questionnaire (SMPDQ) was administered as a pre-test. After the treatment, the questionnaire was also administered as a post-test on all the participants. SMPDQ was developed by the researcher, pilot tested and validated. Using Cronbach alpha reliability test, the instrument yielded reliability co-efficient of 0.72, thus indicating the reliability and internal consistency of the instrument. Data generated were analysed with frequency count, percentage, t-test and Analysis of Covariance.

The questionnaire is divided into three sections, A, B, and C. Part A consists of items which require the students to provide their demographic data. Part B consists of items in dichotomous response mode of 'Yes' or 'No'. The 'C' part of the instrument contains 18 items structured in the Likert Scale format of 'Strongly Agree' 'Agree' 'Disagree' and 'Strongly Disagree'. All dichotomous responses were scored 1 for 'Yes' and 2 for 'No'. For responses in Likert Scale format, all positive items were scored as follows: Strongly agree =4, Agree=3, Disagree=2 and Strongly disagree=1, while reverse was the case for all negative items. The scores of each of the respondents were added. The highest possible score was 72 while the lowest score was 18. The scores of the respondents were taken to be proportionate to their levels of dependence on the mobile phone. The scores were ranked. The respondents whose score fell within the upper quartile were regarded as 'high dependent on mobile phone', the respondents whose scores fell within the lower quartiles were regarded as 'low dependent on mobile phone' while those respondents whose scores fell within the middle were regarded as 'moderate dependent.

5. RESULTS

RQ 1: How frequently do the students use their mobile phones?

Table 1
Frequency of Mobile Phone Usage Among University Undergraduate

Frequency of mobile phone usage	Frequency	Percentage
Rarely	8	6.7%
Occasionally	9	7.5%
Frequent	36	30.0%
Very frequent	67	55.8%
Total	**120**	**100.0%**

The results in Table 1 shows that majority of the students (55.8%) make use of their mobile phones 'very frequently'. An appreciable number of the respondents (30.0%) also use their mobile phones 'frequently, this results are reflected in Figure 1 below.
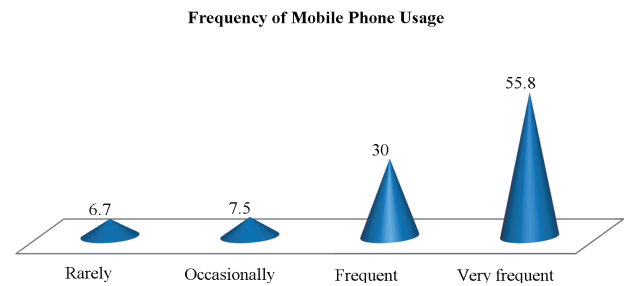

Frequency of Mobile Phone Usage

Figure 1
Frequency of Mobile Phone Usage Among University Undergraduates

RQ 2: What Is the Level of Dependency on Mobile Phone Among Mass Communication Students?

Table 2
Level of Mobile Phone Dependency Among University Undergraduates

Level of dependency	Before		After	
	Frequency	(%)	Frequency	(%)
Low	36	30.0	21	17.5
Moderate	73	60.8	45	37.5
High	11	9.2	54	45.0
Total	120	100.0	120	100.0

Table 2 reveals that majority of the students have 'moderate dependence' on the mobile phone (60.8%) before the treatment. This pattern however changed slightly as many of them fall under 'high dependence' (45.0%) after the treatment, an indication that the treatment might be effective after all.
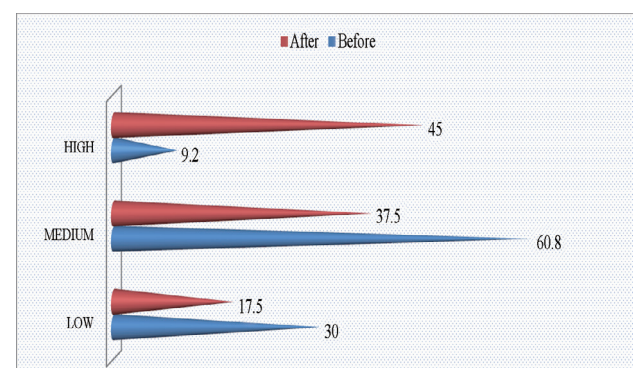

Figure 2
Level of Mobile Phone Dependency Among University Undergraduates

This indicates a significant difference in dependency pre-test scores and dependency post-test scores. With the pre-test mean of 1.7917 and post-test mean of 2.2750, it is obvious that students manifested higher level of dependency on mobile phone after mobile phone withdrawal than before mobile phone withdrawal. This

result indicates a clear effect of treatment on students' level of dependence on mobile phones.

RQ3: Will there be any statistical significant difference in students' dependency on mobile phones before and after treatment

Table 3
Paired Sample *t*-Test of Dependency Before and After Treatment

Level of dependency	Mean	N	Std. Dev.	Std. error mean	t	Df	Sig.	Remark
Dependency (Pre)	1.7917	120	.59261	.05410				
Dependency (Post)	2.2750	120	.74431	.06795	-5.665	119	.000	Sig.

Note. Paired *t*-test as shown in Table 3 was -5.665; *p*<0.05.

RQ 4: Will there be any significant main effect of treatment, gender and academic level on mobile phone dependence among university undergraduates?

Table 4
Effects of Phone Withdrawal, Gender and Academic Level on Mobile Phone Dependence

Tests of between-subjects effects					
Dependent Variable: DEPENDENCY POSTTEST					
Source	Type III sum of squares	df	Mean square	F	Sig.
Corrected model	14.233ᵃ	8	1.779	3.820	.001
Intercept	5.618	1	5.618	12.065	.001
Dependency pre test	1.006	1	1.006	2.160	.144
Treatment	3.832	1	3.832	8.229	.005
Gender	1.782	1	1.782	3.827	.053
Academic level	5.675	1	5.675	12.185	.001
Treatment * gender	.190	1	.190	.407	.525
Treatment *acad. level	.629	1	.629	1.352	.247
Gender * acad. level	.237	1	.237	.509	.477
Treatment * gender * level	.152	1	.152	.326	.569
Error	51.692	111	.466		
Total	687.000	120			
Corrected total	65.925	119			

Note. R squared = .216 (Adjusted *R* sqared= .159)

The results presented in Table 4 shows that treatment (mobile phone withdrawal) had significant effect (*F*=3.832; *p*<0.05) on mobile phone dependence among university undergraduates. Gender had no significant main effect (*F*=1.782; *p*> 0.05) and academic level had significant main effect on mobile phone dependence among undergraduates. The findings show that while withdrawal of mobile phones (Treatment) affected the level of mobile phone dependence, students' academic level as a single factor also affected the level of mobile phone dependence but gender as a single factor did not affect students' dependence on mobile phone. The meaning is that while it could be concluded that

students are dependent on their mobile phones, gender of students actually have nothing to do with dependence on mobile phones. However, in considering dependence, the academic level of students is one factor to watch out for. While post hoc analysis could not be performed to determine the direction of effect whether, it could be assumed that the higher the academic level, the higher the level of mobile phone dependence or vise–visa.

RQ5: Will there be any significant interaction effect of Treatment, Gender and Academic level on mobile phone dependence among university undergraduates?

The results in Table 4 shows no two-way (Treatment and gender, *F*= .190; *p*>0.05; Treatment and academic level, *F*= .629; *p*>0.05; Gender and academic level, *F*=.237; *p*>0.05; *p*>0.05) nor three way interaction (*F*= .152; *p*>0.05). This means that the variables do not combine to affect the level of mobile phone dependence among students.

6. DISCUSSION OF FINDINGS

The findings of this study show that 55% of the subjects of investigation use mobile phone very frequently and 30% use it frequently. The finding is not accidental as it confirms the general assumption that young adults use mobile phone more frequently than adults. It also corroborates the submission of Taiwo (2010) that young people constitute the highest user of mobile phone in Nigeria and the finding of Baron (2008) that young people use mobile phone regularly for socialising and for relational communication. The result shows the level of mobile phone dependence as 'moderate' (60%) before intervention but after the intervention, the level of mobile phone dependence changed to 'High' (45%) from 9.2% before the intervention. This gives credence to the effect of the intervention (withdrawal of phones) on the level of mobile phone dependence. The study also reveals a statistical significance (*t*-test) between pre-test and post-test scores of students on mobile phone dependence. These are clear indications that Mass Communication students in Ajayi Crowther University are truly dependent on their phones. The fact that students' mobile phones were withdrawn for 10 hours made this clearer. Similar findings by Mariscal and Bonina (2008) who studied Mexican youths and; Rao and Desai (2008) who studied Indian mobile phone users are clear confirmations of the current findings. As further revealed by the findings of this study, treatment (telephone withdrawal) recorded a significant effect (*F*=3.832; *p*<0.05) and that students' academic level (whether year one or final year) equally had significant main effect (*F*=12.185; *p*<0.05). It means that students' academic level is a potent factor when considering the variation in students' level of dependence on mobile phones. Even though it could only be assumed that the higher the academic level of students at the higher level their level of dependency on the mobile phone of vice – versa, academic level remains a potent factor.

CONCLUSION AND RECOMMENDATION

The findings of this study have further confirmed, with empirical basis, the earlier observation of scholars concerning the growing dependence on mobile phone by young adults. Although mobile phone was adopted in Nigeria lately, it is worthy of note that Nigerian users, particularly, the young adults have joined the league of dependent users. The actual picture of their level of dependency was uncovered by the intervention (withdrawal of phones) introduced in this study. Unlike the usual descriptive survey which will only reflect the subjective opinion of the subjects on the level of dependency, the measure of the subjects' level of dependency after their phones had been withdrawn for ten hours created a realistic picture. With these findings, no longer should Nigeria lag behind in finding global solution to the problem of over-dependence on mobile phone, in extension, over-dependence or addiction to other media, particularly, the interactive media. Although, as rightly observed by Yoonwhan (2009), we are living in an ever changing new media environment in which people and media interact and influence each other in various and profound ways, but such interaction should be controlled to avoid total entrapment and attendant negative consequences which are clearly detrimental to our social health.

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