

# Reflections on Smartphone: A New Paradigm of Modernity in Nigeria

Oghogho Uyi OSAZEE-ODIA

Department of Mass Communication, Delta State University, Abraka, NIGERIA

## Abstract

This article deals with the study of smartphone adoption and utilization, as a new paradigm of modernity in Nigeria drawing the framework of domestication theory to unravel how the system device integrate into the university students everyday lives. The research draws on self-completion questionnaire and a surveyed of respondents in two sample locations: 250 students at Benson Idahosa University and 350 students at Delta State University using heterogeneous sampling strategy and subjected to statistical conversion via simple percentage, chi-square test and one-way Anova. The findings revealed a number of smartphone domestication patterns citing respondents' appropriation of smartphone with age, year of study, family income and family status of respondents as intervening variables in the adoption behaviour. The study further found access to internet and other applications as the most important smartphone objectification to the respondents in respective universities. Respondents' indication of smartphone incorporation was noted relative to a wide range of friendship activities in their advancement and maintenance of social relationships. The article suggests that future research on smartphone domestication in Nigeria should embrace mixed methods approach: qualitative and quantitative to provide a comprehensive understanding of smartphone adoption and utilization behaviour.

**Keywords:** *Smartphone, Modernity, Nigeria, domestication, heterogeneous, university students: BIU, DELSU, Gender and mixed methods*

## Introduction

Smartphone is the most recent technological innovation of the new media that has defined human progress, creating a new paradigm of modernity and enabling adopters and users to improve on life affairs in terms of connectivity and social interaction with varieties of applications and usage freedom referred to as a new mobile lifestyle (see Liew, 2016; Jesensky, 2016; Phillips, 2014).

Lakshmi and. Kumar, (2014) sees smartphone as a new class of mobile device with advanced features and functionality beyond traditional functionalities and of computing and wireless communication capability representing classic illustration of convergence and digitalisation medium (see Brennen and Kreiss, 2014; Leach, 2014; Lee, 2014). Konok, Gigler et al, (2016) described smartphone as the most prevalent material objects of modern society with strong attachment to users, serving different needs and functions (facilitating opportunity to be in contact with others storing social memories and connections, and proximity seeking behaviour). Further, Madianou, (2014) points to smartphone as global mobile media resulting from the convergence in mobile telephony and personal computing, handheld and portable as well as combining the functionality of a conventional mobile phone with network connectivity that supports the installation and running of software applications. To some researcher, smartphone is regarded as the third screen, with television and personal computers as the first and second screen and has helps usher-in a new phase of users' relationships with telecommunication networks (Jess, 2011; Straubaar, LaRose, and Davenport, (2016). Furthermore, McKenna, (2016) and Digital Trends Staff, (2016) considered smartphone as the fourth screen technology, with movies screens are the first screens, television sets as the second screens, computer screens as the third screens. They also argue that the third and fourth screen technologies have changed the television industry by enabling people to watch their favourite TV show anywhere with third and fourth screen devices. The integration of computer into smartphone technology has enriched the system device in a more utility performance

DeGusta, (2012) explains that the wheel of smartphone as the newest technological device has caught up with the whole world (see Lakshmi and. Kumar, 2014) and its adoption much faster compared to other technological medium before it citing for example that it took landline telephones about 45 years to get from 5 percent to 50 percent penetration among U.S. households whereas it took smartphone about four years to reach 40 percent penetration. Africa including Nigeria is experiencing the growth of smartphone adoption. According to Pew Research Center, (April, 2015) and Beres, (2015) has become the most attractive technological device of the moment.. Specifically, the Pew Research Center point out that younger, educated and English-speaking Africans between the ages of 18-34 years own smartphone citing South Africa and Nigeria with young people smartphone adoption. This development is a reflection of modernity in which smartphone is playing the role of universal

mobile terminal with advance features and functionality (Zheng and Lionel, 2005; Sarwar and Soomro, 2013; Lakshmi and. Kumar, 2014).

Further, previous researchers have point to the importance of gender as critical parameter in assessing mediated communication technologies noting that men and women usage pattern of technologies vary from country to country. For examples, Boneva, Kraut and Frohlick, (2001) reported from the study of using e-mail for personal relationships that women more than men spend time on keeping up with family and friends, and for finding\ new people to communicate. The Pew Research Center, (2016) reported that men are more likely to own smartphone in different countries including Mexico, Nigeria, Kenya and Ghana. Entner, (2010) reported that in US, more men (53 percent) than women (47 percent) are getting smartphone, UK smartphone report, 2012-2015 indicate that women (72 percent) have smartphone that men (68 percent). Evans, Mark, (2013) reported that female use smartphone more frequently than the male to facilitate social relationships. Moreover, Park and Lee, (2014) noted from their study that female respondents are more likely than male to use smartphone text communication to sustain bonding relationships. Palmer (2012) summed up the role of gender-mobile media relationships. According to him, gender involvement with the new media represents a major platform in which men and women are different people who are driven by individuals' interest, sociability and utilization benefit.

### **Theoretical Connection**

The theory of domestication has been applied to underscore the relationships between smartphone and users of the system device. The word *users* implies individuals who bought and use the device relative to the system value and functionalities for self-benefits. Thus, the term adoption and use of smartphone is critical to signpost noting that the domestication theory did emphasise individuals at the heart of smartphone adoption (see Weber, 2005). Earlier researchers on domestication studies can be trace to the work of Haddon, (2001; 2006; 2011); Koskinen and Kurvinen, 2005; Weber, 2005; Shekar, 2009; Hynes and Richardson, 2009; Asante, 2014; Letsie, Kabanda and Chigona, 2015; Reuver, Nikou and Bouwman, 2016).

The stance of these scholars point to four processes of explorative discourse citing for examples, i. *appropriation* (possession and ownership of media device ii. *objectification* relating to values and tastes which gives expressive meaning on the device possession iii. *incorporation* involving active use of the device relative to its functions and iv. *conversion* bordering on the usage behaviour of the device, privately and publicly as part of wider self-expression and self presentation. The common thread relating to these processes is that they all involve actions and linkages on which assessment of users relationships with smartphone can be determine with specific position for further understanding on the ideals of smartphone in modernity.

### **Literature Review**

This section takes on the first three processes of domestication: appropriation, objectification and incorporation to argue the uniqueness of smartphone in the life of people, being the ultimate users of the system technology and the forth; the conversion process to affirm its usage applications and functions relative to the findings which emerges from the questionnaire on the research questions. This is more of quantitative discourse. The review discourse now begins with appropriation process.

#### **Appropriation and Objectification of Smartphone**

The word *appropriation* is the first stage of the domestication process and it implies the adoption of smartphone and the reasons that underlie its adoption noting the system technology is one of convergence and digitalization (see Ganguin and Hoblitz, 2012). The motivation behind its adoption around the world has drawn the researchers and commentators noting differing reasons of influence relative to countries of smartphone penetration. The Pew Research Center, (2015) explains that the adoption of smartphone in US is influence by those who are more affluent and higher levels of education noting the case of young adults, between the ages of 18-29 years whose patterns of smartphone ownership is driven by accessible income, connectivity communication and access to internet and information sharing. For developing countries, low-end cost of smartphone and affordable broadband services delivery have influence the drive for the device ownership (see BCNET 2015; Kissonergis, 2015).

Furthermore, Helena, (2012) and Korst and Sleijpen, (2014) explains that the reasons young people own smartphone may vary from country to country, and that internet access may be a means of attaining relevant information which is less expensive and more accessible than desktop computers. Moreover, Helena, (2012) and Korst and Sleijpen, (2014) also indicated the following as reasons for smartphone ownership: display of one's identity or personality and trendiness, connectivity and browsing the internet. A study carried out at Zurich University revealed that young people are influenced to own smartphone due to the multimedia nature of the system technology that offer wider opportunities for usable applications and functions (Benl, 2014) and Lee,

(2014).also found from their study of factors influencing the adoption behaviour of smartphone early adopters that normative peer influence, familial influence, self-innovativeness and financial burden of smartphone utility play major role in a college students smartphone adoption.

Further evidence has emerged that young people in Malaysia, mostly between the ages of 22 to 25 years are smartphone users and that income and price, convenience (ability to exploit vast system applications without restrictions), dependency (use of smartphone in everyday affairs) and sociability (interaction friends and family members) were motivations for smartphone adoptions (Lay-Yee, Karen Lim et al, 2013)

The objectification of smartphone symbolized the physical nature of the system device with multiple applications for personalization and its incorporation point to the way the device is adapted to enhance social behaviour and mobility relative to time and space. Cho, Vincent and Ngai, Eric, (2014) and Rallapalli et al (2016) explains that smartphone facilitate the mobility of users relative to their social lives.

### **Incorporation of Smartphone**

The term smartphone incorporation is applied to extend the objectification of smartphone further to a level of incorporation refers to as physical usage of the system gadget in everyday interactions, with convenience of use and control decisions. Studies regarding to smartphone incorporation are evolving. For instance, Suzanne, (2015) sees smartphone as a critical gadget in everyday life management noting that in UK over 80 percent of those aged 18-44 rely on smartphone as constant companion more and more in their daily lives and tasks being incorporated into the system applications and functions (see also djs research, 2014).

Chen, Hsin-I et al, (2015) notes that using smartphone in communication with others is now an integral part of users daily life. Thus, they use the term smartphone dependency to explain the physical usage behaviour of the device, arguing that young people are relying on smartphone to forge and maintain interpersonal relations with their group members.

Furthermore, Lungberg, (2013) explains the constant presence of today's smartphone has engendered different forms of social relationships and physical, face-to-face interaction between people and Pang et al, (2014) point out that the unprecedented penetration of smartphone in society offers potentially cost-effective and sustainable solutions for people to stay connected with their families, friends and communities. Ottorino, Joseph, (2014) and Lundquist, Arlene R et al (2014) explains that smartphones are powerful force for bringing people together, grow or maintain friendships, connecting and keeping in touch with friends and maintain relationships even long-distance relationships

### **Smartphone Adoption: Nigeria and the World**

Smartphone adoption in Nigeria has inspired much interest from the wider society enticing generation of adopters and users, from young to older generation. The motivation for the growth of smartphone adoption is linked to the inaccessibility of landline telephone to which less than 500,000 lines were accessible to Nigerians in 2001 (Iwuangwu 2014; Okafor, 2016; Popoola, Megbowon and. Adeloje, (2009), and to the exclusive preserve of the well to do and the well connected in the Nigerian society (Ndukwe, 2011).

The emergence of smartphone provided much relief for Nigerians noting that the convergent nature of smartphone in which all other media forms have been built-in, from voice telephone, telegraph, print, radio, movies, television, internet and computerisation to provide richer services for users. The words multi-functional device and digital Swiss Army knives exemplifies the system capacity into another form of telecommunication terminals and service carriers (see Terada, 2011; Ong, (2012; Zielińska and Zielińskib, 2013; Kessey, 2014; Ubabukoh, 2016)

Today, Nigeria's smartphone adoption is put at 23.1 million adopters in 2015 and further projection to 34 million in 2018 (see Adepetun, 2016). Furthermore, the wheel of smartphone adoption is going on worldwide and available figure indicate that there are about 2.16 billion users of smartphone around the world, projected figure for 2016 (see eMarketer, 2014; Kissonergis, 2015). Moreover, Africa is reported to have 106 million smartphone adopters with further projection to 174 million users in 2019 (Gulf News, 2015)

The motivation of smartphone adoption around the world has been attributed to a number of factors namely; technological innovation, improved usability, increased accessibility and declining cost of the device in terms of price (see Kissonergis, 2015). Moreover, the Pew Research Center, (2016) reported that access to internet

provided much impetus for smartphone adoption around the world with young generation aged between 18 – 34 years as the most prolific adopters and users (see also eMarketer, 2013; Lafrance, 2016) and Van Deursen and Van Dijik (2015) point to young people as the most driver of new media technology, with education and digital skills to exploit the internet in the system performance.

In Nigeria, studies on smartphone adoption are coming up citing for instance, Tunmibi, Aregbesola and Asani, (2015) who reported that majority of the university students surveyed in Nigeria and Republic of Benin were influenced to own smartphone because of internet browsing, connectivity (interaction with friends, family members, community members and people in the wider population). Similarly, Liadi, (2016) noted that the physical nature of smartphone, as an object that gives constructive meaning and marker of self identity as well as peer group influence (enhancer of users sociability in terms of making with one with smartphone) were the reasons for Nigerian university students, aged 17-27 years to take-on the system gadget..

The aim of the current research therefore is to understand the importance of smartphone as a new paradigm of modernity in Nigeria and to offer contribution to the understanding of domestication theory under which this study sits. The key questions examined in this study are;

RQ1: Do socio-economic factors influence university students' adoption of smartphone?

RQ2: What makes university students' take-on smartphone?

RQ3: In what way smartphone adoption influence university students' social relationships?

The university students are upcoming demographic group in Nigerian society with digital skills, value system and lifestyle in today's society.

## **Methodology**

### ***Sample***

A self-completion questionnaire survey was undertaken with heterogeneous sample of university students comprising of 250 participants at BIU and 350 at DELSU (see also Gillspie and Mileti, 1981). The target participants for the survey were drawn from different faculties and departments of each university. The rationale for this sample procedure was informed by the size of respective university with large students' population, faculties and departments and also to ensure representative spread of respondents for the purpose of ensuring predictable generalisation of findings. The participants selected for survey were all users of smartphone with expected ability to complete the questionnaire within the time frame and all participants were briefed prior the distribution of the questionnaire and were asked to fill voluntarily.

### ***Questionnaire***

A pre-structure questionnaire was designed to reflect three main variables are; First; demographic *profiles* of respondents requiring details of gender, age, year of study, family income and status. Second; the respondents reason for smartphone adoption, as a new paradigm of modernity. This was aimed to address the issue of appropriation. Third, the respondents' indication on how they use their smartphone for social relationships and on which six friendships activities were raised as measurement of opinions, This was meant to assess the significance of smartphone incorporation and conversion (respondents meaning on smartphone use that could inform the statistical interpretation) in everyday social lives of respondents.

Giesen, Meerteens, Vis-Vischens and Beukenhorst (2012) explains that the use of questionnaire help facilitate the collection of data required to answer the research questions with the aim of achieving validity of data, reliability and relevance serving further as a cost effective procedure in terms of the researcher ability to distribute questionnaire to a large sample of students in two geographical locations. The questionnaire was structurally standardised, easily readable and completed in a short duration (see Wimmer and Dominick, 2000:162).

### ***Results***

The surveyed results of the university students' smartphone adoption and domestication as a new paradigm of modernity represents the conversion stage and in which usage experience of respondents unfolds through data generated from the self-completion questionnaire, subjective of interpretation and discussion under different domestication path drawing on simple percentages, chi-square test and one-way Anova. All of these exemplify the deductive nature of quantitative survey research (see also Asante, 2014)

### ***Appropriation***

The research question one *does the socio-economic orientation of the university students' influences adoption of smartphone?*

The intervening variables identified in the literature provided the set up of this inquiry to which age, year of study, family status (upper, middle and lower) and family income per month) as well as skills and competencies were put forward as independent variables, with was testation to unfold statistical differences via simple percentage. (see Table 1 - 4 for presentation of data and analysis)

**Table 1: Reported Data on Adoption of Smartphone by Age and Gender**

Categories	Benson Idahosa University			Delta State University		
	GENDER			GENDER		
	Men	Women	Total	Men	Women	Total
18 – 20 years	25 (9.2%)	32 (11.8%)	57 (29.9%)	41 (15.1%)	28 (10.3%)	69 (21.3%)
21 – 25	62 (22.8%)	73 (26.8%)	135 (61.4%)	82 (30.1%)	106 (39.0%)	188 (58%)
26 – 30	20 (7.4%)	5 (1.8%)	25 (11.3%)	23 (8.1%)	22 (8.1%)	45 (13.9%)
Above 30 years	3 (1.1%)	0 (3%)	3 (1.4%)	16 (3.9%)	6 (2.8%)	22 (6.8%)
Total Count	110	110	220 (100)	162	162	324 (100)
Percentage	(40.4%)	(40.4%)		(59.6%)	(59.6%)	

According to Table 1 the majority of the respondents are between the ages of 21 to 25 in BIU and DELSU with gender variations in reported adoption of smartphone in which at BIU women (73 (26.8%) are more likely than men (62 (22.8%) to adopt smartphone while at DELSU. the women (39.0%) are more likely than men (30/1%) to have similar adoption pattern. This finding is consistent with previous research done by the UK Mobile Insight Report, (2013) who reported that 58% of the women owned smartphone compared to 42% men.

**Table 2: Reported Adoption of Smartphone by Year of Study and Institutions**

Categories	BIU	DELSU	Total Count
Year of study			
Year 1	30 (13.6%)	46 (14.2%)	76
Year 2	46 (20.9%)	54 (16.9%)	100
Year 3	44 (20.0%)	64 (19.8%)	108
Year 4	54 (24.6%)	74 (22.8%)	128
Year 5	42 (19.1%)	60 (18.5%)	102
PGD/MA/MSc, PhD	4 (1.8%)	26 (8.0%)	30
Count Total Parentage	220 (100)	324 (100)	544

Table 2 reveals percentage variations of the respondents' year of study at BIU and DELSU, and most of the students were in year four of study. The explanation for this is that year four is critical year in undergraduate studies in Nigerian universities usually referred to as senior undergraduate class and a graduating year with stressful academic engagement and most of the students rely on their smartphone for browsing for academic materials for their coursework and project. The finding is further supported with the argument that the respondents possess education and digital skills to exploit the usage applications of smartphone (see Van Deursen and Van Dijik, 2015)

**Table 3: Reported Data Adoption of Smartphone by Family Income Per month and Gender**

Categories Family Income per month	Benson Idahosa University			Delta State University		
	GENDER			GENDER		
	Men	Women	Total	Men	Women	Total
Under N18,000	0 (0%)	0 (0%)	0 (0%)	1 (0.4%)	6 (2.2%)	7 (2.7%)
N21,000 – N44,000	0 (0%)	0 (0%)	0 (0%)	12 (4.4%)	8 (2.9%)	20 (6.2%)
N45,000-N66,000	7 (2.6%)	5 (1.8%)	12 (5.5%)	23 (8.5%)	9 (3.3%)	32 (9.9%)
N66,001-N85,000	18 (6.6%)	17 (6.3%)	35 (15.9%)	23 (8.5%)	31 (11.4%)	54 (16.0%)
N85,001-N90,000	18 (6.6%)	11 (4.8%)	29 (13.2%)	11 (4.0%)	19 (7.0%)	30 (9.3%)
N90,001-N100,000	17 (6.3%)	7 (2.6%)	24 (10.9%)	17 (6.3%)	10 (3.7%)	27 (8.3%)
Above N100,000	50 (18.4%)	70 (25.7%)	120 (54.5%)	75 (22.5%)	79 (29.0%)	154 (47.5%)
Total Count Percentage	110 (40.4%)	110 (40.4%)	220 (100)	162 (59.6%)	162 (59.6%)	324 (100)

Table 3 shows variations in family income per month among students at BIU and DELSU on which majority of the respondents are from family income of above N100,000 per month indicating that respondents in respective institutions are from the same parental level of family income group.

Earlier pieces of research on the relations of income and new media provided support. For examples, Pedrozo, (2013) argue that parents' income play decisive in media ownership and use and a report on a survey of New Zealanders' use of smartphones revealed that the higher the income, the more likely someone is to own or have access to a smartphone.

Furthermore, gender differences in family income per month were spotted at BIU for which women (25.7%) are more likely than men (18.4%) to come from higher income parental group while at DELSU women (29.0%) are more likely than men (22.5%) to come from similar background. This finding appears to reinvent the connection of family income and students' disposable income. Evidence from the study by UK Tschmuck, (2013) has shown that young people are able to keep up-to-date mobile phone with their monthly disposable income with money from parents as a derivable factor. Thus, the findings of the current study indicate that Nigerian students family income per month is linked to the potentials of disposable income for smartphone adoption and usage behaviour.

**Table 4: Reported Data on Adoption of Smartphone by Family Status and Gender**

Categories Family Economic Status	Benson Idahosa University			Delta State University		
	GENDER			GENDER		
	Men	Women	Total	Men	Women	Total
Upper class	20 (7.4%)	26 (9.6%)	46 (20.9%)	24 (8.8%)	36 (13.2%)	60 (18.5%)
Middle class	85 (31.3%)	80 (29.4%)	165 (75.0%)	122 (44.9%)	107 (39.3%)	229 (70.7%)
Lower class	5 (1.8%)	4 (1.9%)	9 (4.1%)	16 (5.9%)	19 (7.0%)	35 (10.8%)
Total Count Percentage	110 (40.4%)	110 (40.4%)	220 (100)	162 (59.6%)	162 (59.6%)	324 (100)

Table 4 of the respondents' data has shown that most of them are from middle class families with percentage differences between men and women at BIU and DELSU. For examples, at BIU the men (31,3%) are more likely than the women (29.4%) to come from middle class families with capacity to take-on smartphone compared to the women Similarly at DELSU, the men (44%) are more likely than women (39.3%) to embrace smartphone... Thus, the students' capacity to own smartphone could be link to the disposable income and Nigeria students have different means of getting funds to meet up their social life.

### **Objectification**

#### **RQ2: Why do university students adopt smartphone?**

The literature on the reasons for owning smartphone in Nigeria and the world influences the research question two on why the university students adopt the system technology as objectification with multiple applications and functionalities to users



**Table 5: Reported Reasons for Adopting Smartphone**

Variable	Benson Idahosa University				Delta State University			
	GENDER				GENDER			
The reasons for owning smart media device	Men	Women	Total		Men	Women	Total	
To access internet and other system application	74 (33%)	87 (39.%)	161 (73.8%)	$\chi^2 = 7.06$ $df = 2$ $\alpha = 0.05$	91 (28%)	136 (42%)	227 (70%)	$\chi^2 = 31.04$ $df = 2$ $\alpha = 0.05$
Advantage of usage anywhere	18 (8.2%)	6 (2.7%)	24 (10.7%)		52 (16%)	19 (6%)	71 (22%)	
Adaptability of the devices	18 (8.2%)	17 (7.7%)	35 (15.4%)		19 (6%)	7 (2%)	26 (8%)	
Total Percentage	110	110	220 (100)		162	162	324 (100)	

Table 5 provided three reasons to find out why students at Benson Idahosa University and Delta State University adopt smartphone. The following independent variables were provided: to access internet and other system applications, advantage of usage anywhere and adaptability of the devices. Chi-square test revealed different levels of statistical significance between the samples from BIU and DELSU. Thus, internet access as a motivation for smartphone adoption is found to be statistically significant for respondents at DELSU: ( $\chi^2 = 31.04$ ,  $p > 0.05$ ) and less significant for BIU ( $\chi^2 = 7.06$ ,  $p > 0.05$ ). The reason for this difference could be linked to the strength of the respondents nominal data which was higher in DELSU compared to BIU. Also observed is the nature of gender differences which is more obvious at DELSU, the women respondents (42%) were more likely than the men (28%) to own smartphone for the purpose of internet access. This implies that the women were more incline to internet usage, both in terms of social supposes and educational support. This finding also compared favourably with the study in Ireland where 78 % women are using the internet than men 76 % citing usage convenient as a factor for smartphone ownership (see Mobile Web Watch, 2012).

**Incorporation**

**RQ3: How do University students use smartphone for social relationships?**

The literature on smartphone adoption provided the ground for exploration and six predictive factors of friendships activities were raised as independent variables to assess students' opinions (see Table 6.4).

**Table 6.4. Reported Data on Smartphone Use for Social Relationships**

Friendship Activities	BIU		DELSU	
	Men	Women	Men	Women
Making new friends	55	59	61	69
Building friendship connections	70	65	80	84
Maintaining previous friendships	56	55	60	62
Re-uniting with friends	60	55	57	61
Sustaining romantic relationships	54	55	57	56
Connecting with friends & course mates on campus	58	55	63	65

Table 6.4 shows the patterns of social relationships of surveyed respondents with six measures of friendships activities relative to the nominal data between men and women at BIU and DELSU. One-way ANOVA test was applied to the six friendship activities and as individual variables to determine whether there are any significant differences between the means of these friendship variations and between men and women students. The results in Table 6.4.1 and Table 6.4.2 show respective results.

Table 6.4.1: Present the Result at BIU on Smartphone Use for Social relationships among Men and Women Students

**ANOVA**

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	20.200	7	2.886	.780	.638
Within Groups	14.800	4	3.700		
Total	35.000	11			

The result obtained from the analysis indicate that there is no significant difference at 5% level of significance between the friendship activities among men and women student at BIU

Table 6.4.2 Present the Result at DELSU on smartphone use for social relationships among men and women students at DELSU

**ANOVA**

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	30.000	9	3.333	1.333	.500
Within Groups	5.000	2	2.500		
Total	35.000	11			

The result for DELSU shows that there is no significant difference at 5% level of significance between the friendship activities among men and women student at DELSU.

Further reflection on these results suggests that both men and women at BIU and DELSU share similar motivation in friendships development or building network of friends that could sustain their student lives on campus and future aspiration in terms of post university education. This finding appears to support the argument that smartphone domestication helps advance the respondents' friendship behaviour in different dimensions of social life or social relationships (see Boneva, Kraut and Frohlick, 2001; Evans, 2013; Lungberg, 2013; Lundquist, Arlene R et al 2014).

**Discussion and Conclusion**

This article investigated the domestication of smartphone technology as a new paradigm of modernity in Nigeria, with three research questions as a basis for explorative opinion of surveyed participants in two universities: 250 students at BIU and 350 students at DELSU. This was carried out through heterogeneous sampling procedure and statistical application in subjecting the data from the respondents' self-completion questionnaire into analysis and interpretations, with a view to understand the pattern of smartphone domestication. The university students are individual user with usage experience of the system device with differing meanings relative to their socio-economic and cultural orientation and lifestyles (see Weber, 2005).

The research question one asked whether socio-economic factors influence university students' adoption of smartphone. Respondents' opinions on this issue provided insightful positions. For examples, age was a major factor of influence as majority of the respondents were between the ages of 21 to 25 at BIU and DELSU (see Table 1).. This finding compare favourably with similar age bracket in smartphone adoption (see Lay-Yee, Karen Lim et al, 2013). Gender influence is seen to have played decisive role in the adoption process in each university with women as the early adopters of smartphone compared to the men.. These findings is consistent with previous research done by the UK Mobile Insight Report, (2013) who reported that, 58% of the women owned smartphone device compared to 42% men.

Respondents' year of smartphone adoption was important to find out and their opinions revealed that significant proportions of the students are in the fourth year of their study (see Table 2) signifying further that year four in Nigerian universities is a senior undergraduate class and of active academic engagement in terms of the browsing and sourcing for materials to handle assignments and project. This finding suggest that the respondents being in a higher level class possess digital skills to exploit the usage capacity of smartphone in terms of applications and functional derivation (Van Deursen and Van Dijik, 2015)

Furthermore, respondents were gain asked to state their family income per month (see Table. 3). The opinions arising from the students response indicated that majority of them are from upper income families of above N100,000 per month noting that gender variation in family income group for which women are widely viwed to come from higher income parental background than the men. These findings are consistent with previous studies (e.g. Pedrozo, (2013) who argue that parents' income play decisive in media ownership and use and a report on a survey of New Zealanders' use of smartphones revealed that the higher the income, the more likely someone is to own or have access to a smartphone) and the UK Tschmuck, (2013) study found that young people are able to keep up-to-date mobile device with their monthly disposable income with money from parents as a derivable



factor. Moreover, the students were again require to indicate their family status. The findings revealed that most of the respondents were from middle class families to which gender differences were established in the two study locations. For instance, the men is considered to come from middle class families with capacity to embrace smartphone quicker than the women (see Table 4)

Thus, the students' capacity to take-on smartphone could be link to their disposable income and Nigeria students being what they are have different means of getting funds to meet up campus social life. All of these findings affirm the ideals of smartphone appropriation and in which the university students' personal background has engender the motivation for smartphone, as a new technological platform in Nigeria.

Closely following this is the objectification of smartphone in which respondents were asked to give reason for smartphone adoption (RQ2).. The results indicate statistical difference in the adoption pattern of smartphone between BIU and DELSU, as evident in the Chi-square test which is more significant in DELSU (see Table 5). The reason for this difference could be linked to the strength of the respondents nominal data which is higher in DELSU compared to BIU. Gender differences were observed between the two institutions citing women as the most internet users compared to the men (see Table 5). This finding is consistent with previous studies that have found first; access to internet as a motivation for smartphone adoption (Helena, 2012; Korst and Sleijpen, 2014; Pew Research Center, 2015; 2016; Tunmibi, Aregbesola and Asani, 2015) and second; that women involve more of internet usage in terms of social supposes and educational support (Pew Research Center, 2002)

University students' use of smartphone in everyday social lives extends the capacity of the system incorporation in the advancement of social relationships. Respondents were require to indicate how the adoption of smartphone influences their social relationships. The results at BIU and DELSU suggest that the engage in a wide range of friendships activities implying that smartphone play a key role in the students' everyday sociability. This finding appears to corroborate with other studies which found young people actively engage smartphone in friendships development and maintaining existing relationships (Ottorino, 2014; Lundquist, Arlene R et al, 2014; Pang et al, 2014; Chen, Hsin-I et al, 2015).

This research conclude with argument that smartphone domestication possess immense benefits to students suggesting further that the smartphone appropriation and incorporation in Nigeria has opens up wider prospect for users in sustenance of personal affairs and social relationships.

#### **Limitations of study and future direction**

This research cantered on smartphone adoption as a new paradigm of modernity and on which its exploration lies in the context of domestication principles. The study is limited to the university students in two study locations; BIU and DELSU and on which the results arising from the statistical interpretations (conversion of respondents' data into statistical values and meanings) cannot be generalise for the entire Nigeria university students' population. The results can however be use to predict future trend of smartphone adoption and domestication practice in Nigeria. Furthermore, it is suggested future research should embrace the combination of domestication theory and mixed-approach (qualitative versus quantitative) to investigate smartphone adoption and usage behaviour with a view to better understanding on the relation between the system gadget and users in Nigeria society. Boneva, Kraut and Frohlick's, (2001) study of using e-mail for personal relationships with gender differences as a focus of comparative usage patterns draws on mixed-methods approach (quantitative and qualitative) through self-completion questionnaire and explorative interviews, analyse their data and subjective of different interpretations, and reported as a single study. This involves the ideals of triangulation in mixed-methods research.

#### **Acknowledgements**

The author would like to express gratitude to Pew Research Center and other researchers for using their work in this paper. I further extend my gratitude to Dr. Kostas Saltzis and Dr Vincent Campbell for impacting their research culture. Both of the University of Leicester, United Kingdom

#### **References**

Adepetun, Adeyemi, (2016). Smartphone penetration hits 30% in Nigeria <http://guardian.ng/business-services/smartphone-penetration-hits-30-in-nigeria/> [Accessed 30 October, 2016]

Alfawareh, Hejab M and Jusoh., Shaidah, (2014) Smartphones usage among university students:

- Najran University case. International Journal of Academic Research Part B; 6 (2), 321-326.
- Asante, Rabin Kwaku Boakye, (2014). Domestication of mobile phone amongst Kantamanto used clothes traders in Accra. Thesis Submitted for the Degree of PhD in Sociology, University of Ghana, Legon, December.
- Aschroff, Nicole, (2015). The smartphone society <https://www.jacobinmag.com/2015/03/smartphone-usage-technology-aschoff/> [Accessed 15 October, 2016]
- Barkhuus, Louise and Polichar, Valerie E (2010) Empowerment through seamfulness: smartphones in everyday life Sringerlink.com: Accessed 19 November 2013.
- BCNET, (2015). Smartphone adoption in developing world <http://www.bostoncommons.net/smartphone-adoption-in-developing-world/> 15 October, 2016.
- Boneva, B, Kraut, R. And Frohlick, D, (2001) Using e-mail for personal relationships; the difference gender makes. American Behavioural Sciences 45 (1) 530-549
- Brennen, Scot and Kreiss, Daniel, (2014). Digitalization and Digitization <http://culturedigitally.org/2014/09/digitalization-and-digitization> [Accessed 14 October, 2016]
- Bundt, Bettina, (2010) Smartphones and their users Mastee. Thesis Submitted to the Department of Journalism, Media and Communication, Universitet of Stockholms
- Chatfield, Tom, (2016). The Most Intimate Relationship in Your Life: Your Smartphone <http://99u.com/articles/41017/the-most-intimate-relationship-in-your-life-your-smartphone> [Accessed 15 October, 2-16]
- Chen, Hsin-I, (2015). An investigation of smartphone use behaviour and dependency International Journal of Humanities, Social Sciences and Education, Vol. 2 Issue 10, October, 24-28
- Cho, Vincent and Ngai, Eric, (2014). A theoretical framework of the influence of mobility in continued usage intention of smartphone device <http://airccj.org/CSCP/vol4/csit42403.pdf> [Accessed 28 October, 2016].
- Digital Trends Staff, (2016) The history of social networking sites <http://www.digitaltrends.com/features/the-history-of-social-networking/> [Accessed 3 December, 2016]
- DeGusta, Michael, (, 2012). Are smart phones spreading faster than any technology in human history? <https://www.technologyreview.com/s/427787/are-smart-phones-spreading-faster-than-any-technology-in-human-history>.
- djs research, (2014) UK younger generation smartphone users glued their devices, study shows [www.djsresearch.co.uk/.../UK-Younger-Generation-Smartphone-Users-Glued-to-Thei](http://www.djsresearch.co.uk/.../UK-Younger-Generation-Smartphone-Users-Glued-to-Thei). [Accessed 30 October, 2016]
- eMarketer, (2013). Generation Y' leads the way on smartphones <http://www.emarketer.com/Article/Generation-Y-Leads-Way-on-Smartphones/1009604> [Accessed 30 October, 2016]
- eMarketer, (2016). 2 Billion consumers worldwide to get smart(phones) by 2016 <http://www.emarketer.com/Article/2-Billion-Consumers-Worldwide-Smartphones-by-2016/1011694> [Accessed 30 October, 2016]

- Entner, Roger, (2010). Smartphone to overtake feature phones in US by 2011 <http://www.nielsen.com/us/en/insights/news/2010/smartphones-to-overtake-feature-phones-in-u-s-by-2011.html> [Accessed 21 October, 2016]
- Evans, Mark, (2013). Gender as a predictive factor for Ttasks completed using smartphones Conference 2013 February 12-15, Fort Worth, TX, USA
- Giesen, Deidre, Meertens, Vivian, Vis-Visschers, Rachel and Beuikenhorst (2012). Questionnaire development. A Publication of Statistics Netherland, Henri Faas dreef 312, The Hague.
- Gillspie, David F and Mileti, Dennis S. (1981). Heterogeneous samples in organization research Sociological Methods and Research, Vol.9 No. 3, February 375-388.
- Gulf News, (2015). Smartphone usage rockets across Middle East and Africa <http://gulfnnews.com/business/sectors/technology/smartphone-usage-rockets-across-middle-east-and-africa-1.1585002> [Accessed 30 October, 2016]
- Haddon, Leslie, (2001). Domestication and mobile telephony Paper presented at the Conference: 'Machines that Become Us' New Jersey, US; Rutgers University., April, 18-19
- Haddon, Leslie, (2006) The contribution of domestication research to in-home computing and media consumption. The Information Society, No.22, 1-9
- Haddon, Leslie (2011). Domestication analysis, objects of study, and the centrality of technologies in everyday life. Canadian Journal of Communication, **36** (2). 311-323
- Hynes, Deirdre and Richardson, Helen, (2009). What use is domestication theory to information systems research? <http://biblio.uabcs.mx/html/libros/pdf/11/27.pdf> [Accessed 12 October, 2016]
- Iwuagwu, Obi, (2014). The Revolutionary Years: Nigeria's Telecommunication Industry 2001 – 2011. International Journal of Research in Arts and Social Sciences Vol 7, No.1
- Jesensky, John, (2016). Positive impacts of smartphones on social society <http://www.trffcmmedia.com/topics/positive-impacts-of-smartphones-on-social-society/>
- Jess, Shiny, (2011). The third screen wins our hearts as smartphones now outsell PCs [http://www.techdigest.tv/2011/02/the\\_third\\_scre.html](http://www.techdigest.tv/2011/02/the_third_scre.html) [Accessed 30 October, 2016]
- Kelsey, Raina, (2016). Smart Phones: Digital Convergence at Its Best [www.streetdirectory.com](http://www.streetdirectory.com) > Editorials > Technology > Phones [Accessed 30 October, 2016]
- Knowridge, (2016). How smartphone use affects our social relationships <https://knowridge.com/2016/10/how-smartphone-use-affects-our-social-relationships> [Accessed 16 October, 2016]
- Konok, Gigler et al, (2016) Humans' attachment to their mobile phones and its relationship with interpersonal attachment style Computers in Human Behaviour, 61, 537-547
- Koskinen, Ilpo and Kurvinen, Esko, (2005). Mobile multimedia and users: on the domestication of mobile multimedia Teletronikk 3/4.
- Ladage, Rutu, (2013). Why you need a smartphone <http://www.indiatimes.com/technology/mobile/10-reasons-to-own-a-smartphone-68911.html> [Accessed 15 October, 2015]
- Lakshmi, Smt. S. V and Kumar, K. Suresh, (2014). Smartphone impact on social relationship management. International Journal of Academic Research Vol.1 Issue-3 (2), October-December

- Lay-Yee, Karen Lim, Kok-Siew, Han and Yin-Fah, Benjamin Chan, (2013). Factors affecting smartphones purchase decision among Malaysian Generation Y. *International Journal of Asian Social Science*, 2013, 3(12): 2426-2440
- Liadi, Olusegun, Farindeen, (2016). College students and smartphone ownership: symbolic meanings and smartphone consumption among Nigerian students. *AUDC*, Vol. 10, No.1, 17-31
- Leach, Ron, (2014). Digital convergence waits for no man M <http://www.shutterbug.com/content/digital-convergence-waits-no-man#3i32D0gTHOWO4xkH.97> [Accessed 14 October, 2016]
- Lee, Sang Yup. (2014). Examining the factors that influence early adopters' smartphone Adoption: the case of college students. *Telematic and Informatic.*, 31 (2), 308-318.
- Letsie, Masupha, Kabanda, Salah and Chigona, Wallace, (2015) Economically disadvantaged families domesticating mobile devices: case of South African <http://www.developmentinformatics.org/conferences/2015/papers/5-letsie-kabanda-chigona.pdf> [Accessed 16 October, 2016]
- Liew, Jy, (2016). The effect of smart phones on social interaction [https://www.academia.edu/4661907/The\\_effect\\_of\\_smart\\_phones\\_on\\_social\\_interaction](https://www.academia.edu/4661907/The_effect_of_smart_phones_on_social_interaction)
- Lundquist, Arlene R., Lefebvre, Emily J. and Garramone, Sara J. (2014). Smartphones: fulfilling the need for immediacy in everyday life, but at what cost? *International Journal of Humanities and Social Science* Vol. 4 No. 2 [Special Issue /January
- Madden, Christopher (2010). The use of smartphones among students in relation to their education and social life [dare.uva.nl/document/179332](http://dare.uva.nl/document/179332) [Accessed 3 November, 2016]
- Madianou, Mirca, (2014) Smartphones as polymedia. *Journal of Computer-Mediated Communication* 19 (2014) 667–680
- McKenna, Haag, (2016) What is the significance of third and fourth screens in relation to television? <http://mckenna Haag.blogspot.com.ng/2015/11/what-is-significance-of-third-hand.htm> [Accessed 3 December, 2016]
- Mobile Web Watch, (2012). Mobile Internet— spawning new growth opportunities in the convergence era <https://www.accenture.com/.../Accenture-Mobile-Web-Watch-Internet-Usage-Survey-> [Accessed 7 November, 2016]
- Ndukwe, Ernest, (2011) The Telecommunication Revolution in Nigeria Being the text of the Convocation Lecture delivered at the Igbinedion University, Okada on the 2nd December 2011 at the Annual Convocation Ceremony of the University.
- Okafor, Paschal, (2007) Nigeria: mobile phone series <https://www.naijatechguide.com/2007/10/nigeria-mobile-phone-series.html> [Accessed 15 October, 2016]
- Ong, Josh, (2012). Everything is amazing: The harmonic convergence of gadgets <http://thenextweb.com/mobile/2012/12/22/everything-is-amazing-the-harmonic-convergence-of-gadgets/> [Accessed 29 October, 2016]
- Ottorino, Joseph, (2014). How Your Smartphone Can Actually Improve Your Social Life [http://www.huffingtonpost.ca/joseph-ottorino/smartphone-social-life\\_b\\_5537273.html](http://www.huffingtonpost.ca/joseph-ottorino/smartphone-social-life_b_5537273.html) [Accessed 29 October, 2016]
- Park, Namsu and Lee, Hyun Joo (2014). Gender difference in social networking on smartphones: a case study of Korean college students smartphone user'. *International Telecommunications Policy Review*, Vol. 21, No. 2 June 1-18.

- Pew Research Center, (2015). Cell phones in Africa: communication lifeline [file:///E:/Pew-Research-Center-Africa-Cell-Phone-Report-FINAL-April-15-2015%20\(1\).pdf](file:///E:/Pew-Research-Center-Africa-Cell-Phone-Report-FINAL-April-15-2015%20(1).pdf)
- Pew Research Center, (2015). U.S. smartphone use in 2015. [www.pewinternet.org/2015/04/01/us-smartphone-use-in-2015](http://www.pewinternet.org/2015/04/01/us-smartphone-use-in-2015) [Accessed 18 April, 2015]
- Pew Research Center, (2015). 6 facts about Americans and their smartphones <http://www.pewresearch.org/facttank/2015/04/01/6factsaboutamericansandtheirsmartphones>
- Pew Research Center, (2016). Smartphone ownership and internet usage continues to climb in emerging economies. [www.pewglobal.org/.../smartphone-ownership-and-internet-usage-continues-to-climb](http://www.pewglobal.org/.../smartphone-ownership-and-internet-usage-continues-to-climb)
- Phillips, Casey, (2014). How Smartphones Revolutionized Society in Less than a Decade <http://www.govtech.com/products/How-Smartphones-Revolutionized-Society-in-Less-than-a-decade.html>
- Popoola, J. J. Megbowon, I. O and. Adeloje, V. S. A, (2009) Performance evaluation and improvement on quality of service of Global System for Mobile Communications in Nigeria Journal of Information Technology Impact, Vol. 9, No. 2, 91-106
- Rallapalli, Swati, (2016). Analysis and Applications of Smartphone User Mobility [www.cs.utexas.edu/~swati/mobility\\_netscicom13.pdf](http://www.cs.utexas.edu/~swati/mobility_netscicom13.pdf) [Accessed 28 October, 2016]
- Reuver, Mark de, Nikou, Shahrokh and Bouwman, Harry, (2016) Domestication of smartphone and mobile applications: A quantitative mixed-method study. Mobile Media and Communication 2016, Vol. 4(3) 347–370.
- Revmatas, Emmanouil, (2016). Growth of smart phones in Nigeria is driven by availability of broadband <http://www.vanguardngr.com/2016/04/growth-smart-phones-nigeria-driven-availability-broadband/> [Accessed 8 November, 2016]
- Sarwar, Mohammad and Soomro, Tariq Rahim (2013). Impact of Smartphones's on Society. European Journal of Scientific Research, Vol.98, No.2 March, 216-226
- Shekar, Madhuri, (2009). Domestication of the cell phone on a college campus: a case study Dissertation submitted to the Department of Media and Communications, London School of Economics and Political Science, September 2008, in partial fulfilment of the requirements for the MSc in Global Media and Communications.
- Smartphones usage by gender in the UK 2012-2015 <https://www.statista.com/statistics/300430/smartphone-usage-in-the-uk-by-gender/> [Accessed 21 October, 2016]
- Straubaar, Joseph, LaRose, Robert and Davenport, Lucinda, (2016). Media now: understanding media, culture and technology (ninth edition); United Kingdom: Cengage Learning
- Suzanne, (2015) Smartphones - Our new best friends <http://www.thetrendsobservatory.com/blog/post/2-smartphones-our-new-best-friends/> [Accessed 29 October, 2016]
- Terada, Shinichiro (2011) The impact of new terminals on telecommunications carriers and TV media companies, 22nd European Regional Conference of the International Telecommunications Society (ITS2011), Budapest, 18 - 21 September, Innovative ICT Applications - Emerging Regulatory, Economic and Policy Issues.
- Tunmibi, S, Aregbesola A. And Asani, E. O. (2015). Factors influencing the adoption of smartphones by university students: a cross-border approach. African Journal of Computing and ICT, Vol.8, No.1, March
- Ubabukoh, Ozioma, (2016) Nine ways to make smartphone to pay itself. Vanguard Newspaper, 14 November, 2016 .3

- 
- Van Deursen Alexander and Van Dijik Jan, (April, 2015) New Media and the Digital International Encyclopaedia of the Social & Behavioural Sciences, Edition: 2, Elsevier, Editors: James Wright,787–792 Divide  
Publisher:
- Weber, Heike, (2005). On ‘Domestication’ who is domesticating what or whom? Paper presented at Design and Consumption: Ideas at the Interface, a Workshop held at Durham University, UK, 12 – 13 January
- Wimmer, Roger D and Dominick, Joesph R. (2000). Mass media research: an introduction (Sixth Edition). London: Wadsworth Publishing Company
- Xu, Q., Mao, Z.M., Arbor, A., Erman, J., Park, F., Gerber, A. (2011). 'Identifying diverse usage behaviours of smartphone apps'. In: *IMC'11*. Berlin, Germany, 329–344.
- Zielińska, Andrzej and Zielińskib, Kazimierz, (2013) Mobile Telecommunication systems changed the electronic communications and ICT market Journal of Telecommunications and Information Technology 2