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Digital Divide & E-Commerce Penetration the Diffusion Theory & Government Policy Paradox

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Abstract:

This paper is a post-intervention survey which assessed the impact of the context of mandatory use of Technology in Nigeria. This is sequel to a pre-intervention study of 114 university academics in North-eastern Nigeria on the voluntary use of e-Commerce among academics. The post intervention result upholds the context of mandatory use hypothesis. The result findings being antecedents of acceptance—usefulness and perceived ease of use found redundant, except attitudinal change. The outcome of this study is a paradox, as the finding violates the cascaded stages of Innovation Diffusion Theory and the Technology Acceptance Model Theory. Recommendations on findings and methodological limitations were made in the study for further studies.

Keywords: Diffusion theory, digital divide, e-Commerce, mandatory hypothesis, Tele-density

1. Introduction

The Technology Acceptance Model (TAM) has to a large extent advanced the understanding of technology acceptance in society and the significance of its initial acceptance (Venkatesh & Davis, 2000; Davis, Bagozzi & Warshaw, 1989). However, Technology continuous usage and spread is a very critical factor (Bhattacharjee, 2001), this fact was explained by the innovation diffusion theory (Rogers, 2005). Yet, the adoption technology has been plagued with myriad of problems viewed between nations and between individuals (International Telecommunication Union (ITU), 2014; Square, 2008; Carveth & Kretchmer, 2002) and the divide also has multiple dimensions and dynamic as such, the divide will persist as long as disparity in control of wealth persist (Sukka, 2002).

In attempt to explain the reasons for the disparity in the spread of technologies and ideas between peoples, Rogers (2005) developed a model which shade light on the acceptance of technology in a social system. Closely associated to this is model on the spread of technology in society (Davis, 1989) which has been accepted as being significant model in the sense of the commercial viability of the technology (Venkatesh & Davis, 2000).

This study reflects (Xu & Yuan, 2009; Venkatesh & Davis, 2000; Rawstorne, Jayasuriya & Caputi, 1998) the assertion that questions the significance of the TAM's 'user' and 'intention' variables as being redundant in the context of mandatory use of technology. The study used data from a survey in 2011 of academics of three Federal Universities from North-Eastern Nigeria. The study result found a negligible use of e-Commerce among the population, however after the enactment of a government policy for mandatory cashless economy (e-Commerce) initiative there was a sudden change in attitude for full compliance to the acceptance of the technology. This was observed as being contrary to both the TAM and Innovation Diffusion Theory (IDT) propositions; however, it lent support to the context of mandatory use hypothesis (Venkatesh & Davis, 2000; Rawstorne, *et al*, 1998).

The remaining part of this article will be divided into the following sections; The IDT, Literature review, Theoretical framework, Data source, Methods, Sampling, Data analysis, Findings, The paradox, Summary, Conclusion and Recommendations.

It is assumed that the status of an individual, especially among academics, will influence his/her need for information (Jan & Contreras, 2011); and it is also known that the higher the status of an individual, the higher the income and thus the higher the purchasing power. This is in consonance with 'The Absolute Income Hypothesis', propounded by Keynes, which states that, when income increases consumption also increases (Bălă, 2015; Keynes, 1936). This study therefore assumed that higher income academics have a higher propensity to use e-Commerce technology than lower income members of the academic community.

1.1. The Innovation Diffusion Theory (IDT)

The concept of the IDT is one of the approaches that has received wide acceptance in explaining the phenomenon of digital divide. According to this theory, adoption of technological innovations by individuals is a function of one's

innovativeness, or willingness to try new products (Rogers, 2005). The theory proposes that a small segment of the population (usually less than 3%) accept the risk of adopting a new idea, product, invention or behavior before anyone else (Rogers 2005). Eventually, if others see the benefits they can obtain from adopting the innovative activity, then these others will adopt the new idea or product, (Valente, 1993; Markus, 1987; Ryan & Gross as cited in Carveth & Kretchmer, 2002). The nature of diffusion and adoption of a new communication technology such as the Internet can be viewed from the perspective of diffusion theory. Rogers (2005) has characterized the diffusion process using a bell-shaped curve to illustrate how long it takes to adopt an innovation in a population. Rogers proposed that the concept of 'critical mass' is crucial to the diffusion process. Critical mass refers to the point at which the number of adopters is large enough for the growth process to become self-sustaining. The ultimate importance of any innovation is viewed in the words of Valente, (1995): An innovation is of little value unless other individuals also adopt it.

If people feel that the cost of subscribing to an Internet service outweighs the benefits, then there will be too few subscribers for this innovation to become self-sustaining (Valente, 1995). Thus, it is important to consider critical mass in understanding the conditions under which reciprocal behavior gets started and becomes self-sustaining (Markus, 1987). This line of thinking is supported by Morris & Ogan (1996), they suggested that for any medium to be considered a mass medium, and therefore economically viable to advertisers, a critical mass of adopters must be present. Communicative media, such as the Internet, will only be useful when more and more people adapt and adopt it. At the present time, global subscription for the Internet has reached the critical mass threshold suggested by Rogers (2005) which ensured that its adoption rate has become self-sustaining. This is clearly reflected in the percentage of users among the study population, where 87 representing 97% of the sample had computers connected to the internet with 87% active browsers (Balami, 2011).

Apart from the cost-benefit considerations, other factors that are of crucial implication to a nation's Internet diffusion is the availability and status of infrastructural reticulation and its international gateway. When the local network is properly distributed accompanied by effective and efficient gateway more people will aspire to subscribe to the services and such end users will not have problem in accessing and delivering services (Bazar & Boalch, 1997). These are the basic attributes in explaining the IDT.

The ability to procure goods and services over the internet has brought phenomenal change in the way businesses are carried out. These changes are evident in the mode of operation, promotion by producers on one hand and selection of goods and services by consumers on the other hand. The transactions are performed with little or no physical contact between the parties involved, (producers and consumers). This is made possible through intelligent computer systems and corresponding software that are designed to render services twenty-four hours a day, seven days a week (24/7), on a global basis (Geelan, 2009). The introduction and implementation of the World Wide Web has introduced a new age, 'the digital age', bringing far flung world economies together (global village), and facilitating and enhancing resource sharing. Thus, educational institutions as well as businesses are making every effort to get connected to the internet (Lee, Hsieh & Hsu, 2011; Aguele, 2007; Vicente & Lopez, 2006). Similarly, many people are now connected to the internet to access information and to procure goods and services; however, some sections of society do not have access to this technology and services, thus giving rise to a situation which is referred to as the 'Digital Divide'.

The Technology behind e-Commerce provide for goods and services to be virtually placed on websites using powerful computers termed 'servers' with associated software implemented on the same (Square, 2008). An innovation that has brought about a dramatic and unprecedented change in speed and reduced geographical spread making it convenient to practice a modern approach to commerce—electronic commerce (e-Commerce). These enable producers to conveniently place their goods or services on a digital market-place (website) as against a physical storefront (Wang & Chen, 2010). Consumers can digitally view, select and add to their digital basket, or delete items at will. Payment can also be affected through interfaces on the host websites by the use of credit cards or other online financial instruments (Slade, Dwivedi, Piercy & Williams, 2015).

The marketplace in e-Commerce which exists in the form of Websites could be static or dynamic. A static web site only displays pictures and information about goods or services whereas a dynamic site involves animated displays. This process of sales and procurement of goods and services through the internet (e-Commerce) obviously not only makes service delivery and marketing of goods and services easier but serves as an avenue for developing economies to improve if they can proffer solutions to solve the Digital Divide (Kotler, 1997).

This study therefore examines the extent to which members of the academic community (Federal Universities in North-Eastern Nigeria) practice e-Commerce with a view to revealing the impediments (Digital Divide) that militates against its practice and how government policy invoked the context of mandatory use hypothesis with its concomitant violation of the Innovation of Diffusion Theory.

2. Literature Review

The deployment of Technology for rendering and acquiring goods and services has become a global phenomenon that affects all strata of society and all forms of business. Despite the ever-growing modifications, discovery and introduction of new tools and rules in the world of commerce, none has revolutionized business more profoundly than e-Commerce (O'Brien, 2001). However, severe variations in the ownership and usage of e-Commerce infrastructure pose great concern to both

producers and consumers. Therefore, there is an ever-increasing desire to reduce these variation, here referred to as, 'Digital Divide' (Carveth & Kretchmer, 2002).

2.1. Computer Ownership

Vittin (2010), asserts that it is difficult to ascertain computer ownership and usage in developing economies, because of the various ways in which people obtain computers: These include brand new or fairly used purchases from retail stores, from individuals, and others could be through donations by Non-Governmental Organisations (NGOs) or research institutions (Vittin, 2010). However, the ratio of computer to persons is still quite low; For example, Ugandans living at \$2 per day are far from being able to afford computers. As such, Uganda was estimated to have ten installed computers per 100 people, with most of them donated, for example in 2007, 27,000 computers were donated (Brown, 2010).

2.2. Internet Use

Because of the general low-income level, many people in Africa resort to public internet services (cafes). In fact, most computers connected to the internet are found in leading commercial cities, for example, 74% of those residing in Nairobi were found to have used a computer, where Lagos and Kampala had 69% and 68% respectively. These achievements were attributed to a general rise in literacy levels as well as efforts by governments and other stakeholders to push the spread of Information and Communication Technology (ICT) especially in cities and urban centres. Most of these people use the computer for word processing more than for internet services, for example, 59% of Madagascar's computers were used for word processing and 44% for internet browsing, while Ethiopia was found to have surpassed most African countries in sending or downloading emails, accounting for 82% (Vittin, 2010; Balami, 2011). World Internet Usage Statistics News and Population Stats (2008), asserted that as at 2008, 1.407 billion people use the Internet. Among developing countries, most of the contributions to this figure came from South Africa, Kenya and Ethiopia, all of which had an early introduction of computers and internet services. In Africa, a figure which has seen tremendous increment within a very short period is mobile broadband in Least Developed Countries (LDCs) growing at about two times (26%) as against 11.5% in developed countries, with internet users increasing from about 2.3% in 2011 to 2.8 in 2014 (ITU, 2014). These are indicators to the prospects of e-Commerce in Nigeria which is one of the largest economies in Africa (Africa Progress Report, 2014:28).

2.3. The concept of e-commerce

Geelan (2009), views e-Commerce as consisting of transactions conducted over the Internet, either by consumers purchasing goods and/or services, or between businesses. In other words, e-Commerce is a 'global phenomenon (in commerce) that is taking place over a wired/virtual market-place (Laudon & Traver, 2007). The meaning of the term 'electronic commerce' has undergone changes over the years. Earlier, 'electronic commerce' was viewed as the facilitation of commercial transactions electronically, usually using technologies like Electronic Data Interchange (EDI) and Electronic Funds Transfer (EFT), where both were introduced in the late 1970's, for example, to send commercial documents like purchase orders or invoices electronically (Geelan, 2009; Miers (1996).

However, technological developments now make it possible, such that goods and services are animated and prompt payments can be made for the same, online. The speed of delivery greatly depends on the type of service or goods, but software and related (online) products can be delivered instantly to the customer's email box on the computer. Thus, e-Commerce is the complete set of processes that support/make possible commercial business activities on an electronic network (Xiao & Benbasat, 2007).

2.4. Application of e-Commerce

Miers (1996) hails e-Commerce as the most fundamental change since paper money was invented. Companies are sponsoring three basic categories of e-Commerce applications: These are Business-to-Consumer (B2C), Business-to-Business (B2B), and Customer-to-Customer (C2C). However, B2C and B2B are said to be the predominant forms of e-Commerce. O'Brien, (2001) asserts this in that the most common types of e-Commerce transactions that are prevalent in USA and other developed regions of the world are the B2B and the B2C.

2.5. e-Commerce in developing countries

Despite e-Commerce's benefits, there are many challenges which developing economies encounter in modeling e-Commerce due mainly to the many factors that have to be in place for e-Commerce to work. For example, in 2003, the prospects for e-Commerce in the Third World was dim because the great bulk of firms and individuals then could not even possess the hardware (e-Commerce Digest 2003). Alice and Beatrices' (2003) survey of e-Commerce in Africa highlighted key deficiencies like poor backbone or none-availability of it, high internet access cost, lack of residential address, cybercrime, language variations, varying tax systems, government censorship of internet and different national currencies this corroborate findings in Pakistan (Sajid, 2008). Due to these issues experts and industry insiders suggest a government policy that will spur connectivity and infrastructural development by reducing import duties and to address monopolistic behaviours of submarine cable operators, (pcWorld, 2014). Finally, in many underdeveloped nations, bandwidth is still very expensive and many people

still do not have the technical-know-how and knowledge of how to obtain and use payment instruments whilst the residential address system is not adequate for physical delivery of goods (Forester, 1999).

2.6. Future of e-Commerce

In an e-Commerce survey, it was observed that the future of e-Commerce is promising in the 21st century and that it will result in the growth of internet sales and evolution (e-Commerce-land.com, 2008). The current experience in Nigeria positively supports this notion (Dipo Fatokun, punch online, 2015). This is also corroborated by the British Broadcasting Corporation, Hausa service (bbchousa.com, 2015), which pointed out that e-Commerce is readily accepted in Nigeria with the entry of PayPal into Nigeria to serve as a gateway for electronic remittances, which saw thousands registering in its first week of operations alone. This is an indication that despite fears of internet insecurity and system failures, government policies can stimulate people to accept a technology, supporting the proposition of incentive which is significant on user's behavior (Xu & Yuan, 2009) as against the TAM which proposes that for a people to accept a technology it must be useful and easy to use (Venkatesh & Davis, 2000). This is clearly evidenced in the quick public acceptance of e-Commerce in Nigeria which was enforced by the Central Bank of Nigeria's (2015) mandatory electronic transactions initiative. This sudden change also violates the IDT assertion that seeks to explain how, why, and at what rate new ideas or technology spreads, in this case the spreads of e-Commerce (Rogers, 2005). Roger's assertion is based on the premise that four main elements influence the spread of a new idea: the innovation itself, communication channels, time, and a social system. However, the empirical evidence from this study did not support either of these conditions or the categorization of adopters (Fig 1), this renders the antecedents redundant. The sudden adoption was as a result of context of mandatory use (Rawstorne, et al, 1998; Xu & Yuan, 2009; Linders, 2006) which was informed and enforced by the government Act.

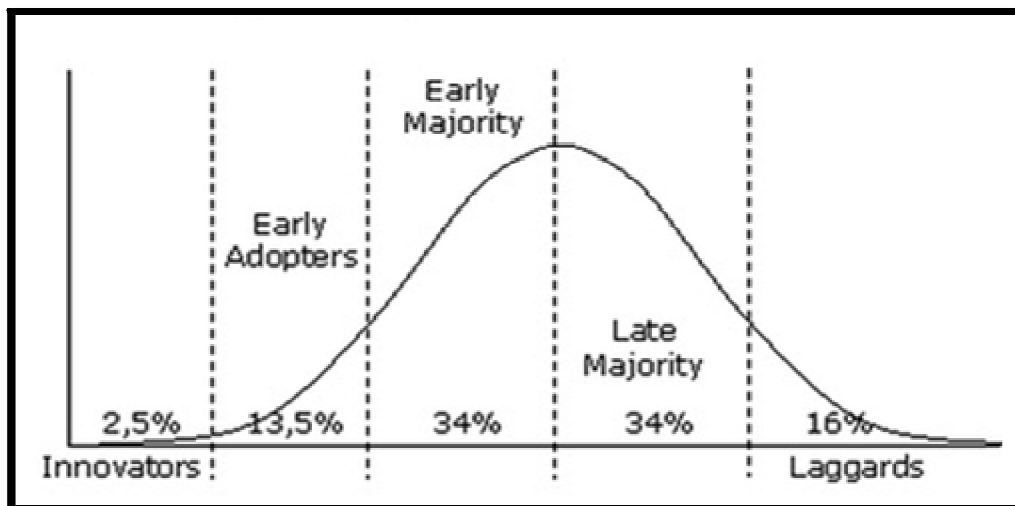


Figure 1: Rogers's Innovation Diffusion Curve

2.7. The Concept of Digital Divide

The Digital Divide describes the discrepancy between people who have access to the Internet, and people who do not. It can also be viewed as the discrepancy between those who possess skills, abilities and knowledge of technologies and those who do not (Sukkar, 2002). And that the divide could be within, or between nations, that is:

- The Global Divide (among nations)
- The Social Divide (within nations)

This view is shared by BBC Online (2000), which opined that the Digital Divide can be looked at either nationally (between peoples) or internationally between the 'information-rich' and the 'information-poor' countries (between nations). Sukkar (2002) explained why the Digital Divide should be addressed. He said that industrialized countries and privileged groups are increasing their access and effective use of ICT daily and this serves as a catalyst to productivity, thus boosting trade between such countries through e-Commerce.

2.8. Factors Leading to Digital Divide

Most West European nations show similar internal indicators that predict their national digital divide: This is also manifested in the United States 'intra-national' digital divide, namely; age and income. However, unlike the United States, gender is a significant contributing factor to the intra-national digital divide in Western Europe (Carveth & Kretchmer, 2002). Also, in many countries in Western Europe, older demographic groups are less likely to use the Internet than younger demographic groups; But findings in the United States indicates that the higher the household income, the more likely that the members of that household will own a computer and use the Internet. This is supported by Sukkar's (2002) study in the

Mediterranean, which indicates income as a major factor to internet access. The same pattern is evident throughout Western Europe. In the United Kingdom, only 23% of the lower income groups ride on the information superhighway, compared to 68% of those in the higher income groups. A finding from France shows that about 74% of those in the higher income bracket had personal computers, as against 11% in the lower income bracket. Italy had an even worse more negative situation where only 9% of the unemployed had ever gone online then, compared to 70% of students and 38% of the work force (Meland, as cited in Carveth & Kretchmer, 2002).

Conversely, in the United States, men and women make up roughly the same number of Internet users (Meland, 2000). Overall, Carveth and Kretchmer (2002) assert that, two digital divides plague Western Europe. First, there is a regional digital divide between Northern European countries and Southern ones. Secondly, the Western European digital divide is based on age, income and gender. However, Balami (2011), found age as the only major militating factor against the practice of e-Commerce among the academic members of three Federal Universities in North-Easter Nigeria.

2.9. Bridging the digital divide

The earliest ITU records on telecommunications (1871), which recorded data on telegraph operations since 1849, showed that even then there was already a divide between the Member States, mainly within Western Europe at that time. Though such gaps have since narrowed and some are experiencing reversal in trends, however, other disparities have risen such between male and female, the old and the young (World Information Report, 2007). This suggests that, there is a type of dynamics in the digital divide which evolves over time with older technologies tending to be more evenly diffused than newer ones. For example, TV sets are more evenly distributed than 3G mobile phones; and, as stated earlier by Sukkar (2002), the divide is in different dimensions, and that it is not single but multiple: for instance, within countries, between men and women, between the young and the elderly, between different regions and so forth. Finally, it is believed that as disparities in wealth continue to exist, the digital divide will also persist (Durlauf, 1992; World Information Society, 2007).

3. Theoretical Framework

Literatures on the digital divide which have tried to unveil responsible factors and to proffer solutions to these impediments often use the Diffusion Theory and the Lorenze Curve with the Gini Coefficient (ITU, 2014; Vicente & Lo'pez, 2006; Vijayarathy, 2004). They were employed in the 2011 study to help explain whether or not the divide exists and to what extent. The study adopts the Penetration Rate by Income Model of the ITU to measure the distribution of ICT (computers and internet connection) in the study area and employed the Lorenz curve and the Gini coefficient to ascertain the extent of equality/inequality (Balami, 2011).

3.1. Data Sources

The data used for this study was from a 2011 survey of a Master of Science Dissertation-M.Sc. Business Administration and a 2015 follow up survey based on telephone interviews and secondary data from newspapers, ITU, United Nation (UN) and Central Bank of Nigeria (CBN) publications.

3.2. Methodology

This study employed the survey method which was complemented with secondary data sources. The population of this study was made up of all academic staff of the three Federal Universities in North-Eastern Nigeria, namely, University of Maiduguri (UNIMAID), Federal University of Technology Yola (FUTY) and Abubakar Tafawa Balewa University Bauchi (ATBU). University of Maiduguri is made up of 729 academics, Abubakar Tafawa Balewa University Bauchi, 309 academics and Federal University of Technology Yola has 451 academics, totaling 1,489. A break down is seen in Table 1.

S.No	Cadre	Institution			Total
		UNIMAID	A.T.B.U	F.U.T.Y	
1	Professors	97	40	30	167
2	Readers/Associate Prof.	61	25	26	112
3	Senior Lecturers	115	95	40	250
4	Lecturers I	236	55	190	481
5	Lecturers-II/Research Fellow-I	82	55	58	195
6	Assistant Lecturers/Research Fellow-II	138	39	107	284
Total		729	309	451	1,489

Table 1: Number of Academics by Cadre by Institution in Study Area (N=1,489)
Source: Senior Staff Establishment and Academic Staff Union of Universities, 2009

3.3. Sample Size and Sampling Technique

In obtaining data for this study, a multi-stage approach was adopted. Firstly, purposive sampling technique was used to select the institutions that were involved in the study. They are all situated in major towns in the study area. These towns are major commercial centers and/or gateways to large commercial towns and to international boundaries.

The population was systematically stratified along cadre lines; this was achieved through grouping academic staff according to levels which were directly related to their income levels of which is the major parameter for measuring level of consumption in this study. From this groups of Professors, Readers/Associate Professors, Senior Lecturers, Lecturers-I, Lecturers-II/Research Fellows-I, and Assistant Lecturers/Research Fellows-II, respondents were picked randomly.

About ten percent of the population was taken as the sample for this study, which was made up of 69 respondents from University of Maiduguri, 36 respondents from Federal University of Technology, Yola and 38 from Abubakar Tafawa Balewa University, Bauchi. This study assumed that academic staff is more prone to use the internet than non-academics: Therefore, it was limited to the academics only.

3.4. Data analysis

The 2011 data was analyzed and presented in a descriptive format in the form of tables and charts. Statistical tools used included frequencies, means and deviations, while Chi-Square was used to test the hypotheses in the study. In addition, the Lorenz curve and the Gini coefficient were used to determine the cumulative by class, on Information and Communication Technology.

4. Findings

It was found that there are academics who do not own any computer, though the representation seems negligible, 1.4% (Balami, 2011). However, despite the high *Tele-density* in ownership of internet ready laptops, a large number of academics in the study area still patronize internet cafés. This indicates that they have not been getting satisfaction from the services (*GSM Modem and service providers*) they have subscribed to. There is relatively little awareness in terms of internet usage for e-Commerce, despite the fact that a high proportion uses the internet for other reasons, of every 19 academics in the study area only 1 uses the internet to procure or sell goods and/or services. About half (50%) of respondents are not familiar with encryption services provided by web-owners/hosts to secure customer Personal Identification Numbers (PIN), and this is another indication that members of this population are not regular in trading through e-Commerce. Gender was not an issue as against findings in Western Europe, (Carveth & Kretchmer, 2002; Meland, 2000).

Similarly, cost was not a major inhibiting factor among the study group as 108 representing 77.1% indicated cost of internet services is not a problem (Markus, 1987). In other words, they considered the benefit of the internet services to outweigh the cost (Markus, 1987). For example, if people feel the cost of subscribing to an Internet service outweighs the benefits, then there will be insufficient uptake for this innovation to become self-sustaining. This supports the critical mass proposition which helps us understand the conditions under which reciprocal behavior gets started and becomes self-sustaining (critical mass) (Markus, 1987).

4.1. The Paradox

From the results of this study prospects for the full adoption of e-Commerce does not seem feasible in the near future. However, reports by the BBC broadcasting corporation and the Central Bank of Nigeria (bbchousa.com, 2015; CBN, 2015) indicates that due to the Nigerian government through CBN policy on cashless economy and the associated assurances of making remittances through globally recognized companies, (Jumia, Konga and Pay Pal) and the provision of Point of Sales (POS) terminals, increase in Automated Teller Machines (ATM) points, there was an upsurge of clients making online purchases and a sudden increase in the mobile data on smart phones. Currently, the 2015 survey yields a result almost the exact opposite of the 2011 survey (Vide Table 2).

Item	2011			2015	
	Response	Freq	%		%
Use e-Commerce, before policy	Yes	6	5.26	Use e-Commerce, After policy	100.00
	No	108	94.74		0.00
Total		114	100.00		100.00

Table 2: e-Commerce Use Survey Report - 2011 and 2015 (N=114)

Source: Balami, (2011 & 2015) Compiled by Author

The 2011 survey had indicated that the major determining factor is information on awareness and recommended that the followings should be made available by the Nigerian government:

- Adequate and convincing information to the public
- Proportionate bandwidth to support online transactions
- Enact cybercrime laws
- Provision of energy and affordable paying instruments.

In the following year (2012), the Nigerian government then engaged in a vigorous campaign commenced to educate the public on procedures and benefits of the system to individuals and how it would assist in determining Nigeria's position in global economies.

However, even though not all the recommendations were met, especially cybercrime security laws and consistent power supply, the public were made to comply because stiff measures were put in place for non-compliance (Xu & Yuan, 2009). As in the context of mandatory use, the effect on users is direct and users have to accept defying the perceived usefulness and ease of use phenomenon (Venkatesh & Davis, 2000). While the Diffusion Theory has received wide acceptance in both theory and practice, it is not without its limits (Mather, Caputi & Jayasuriya, 2002). The phenomenon of technology acceptance in the context of Nigeria e-Commerce (cashless economy) implementation policy has gone against the Innovation Diffusion Theory, which asserts that acceptance of technology is in stages and at the discretion of the end-user (Rogers, 2005). The Innovation Diffusion Theory can therefore be termed relative, situational and dependent on circumstances such as government policies. As the mandatory use make some of the variables in both the TAM and IDT redundant (Xu & Yuan, 2009), since none of Roger's (2003) adoption stages were adhered to nor were the innovation diffusion stages followed in adopting the new technology (Davis, 1989; Markus, 1987; Valente, 1993). This study considers this phenomenon as a paradox with regards to the TAM and the IDT as an unforeseen weakness to these widely used theories.

4.2. Current Situation

While the 2011 survey concluded that the population was still at the awareness stage of adoption; However, as a result of the context of mandatory use by the government followed by the provision of the necessary infrastructural and network backbone, the expected stages of the Diffusion Theory were as well nullified—People were forced to adopt and adapt to the system as against the gradual diffusion process (Xu & Yuan, 2009; Mather, *et al.*, 2002). In line with the 2011 survey recommendations, the Nigerian government implemented some of the recommendations in educating the people about the availability, importance and viability of e-Commerce.

5. Summary

Information and Communication Technologies are believed to be the major economic drivers (Coelen, 2009), and the genesis and enabling tool for globalization, 'global village' in this era of soft economy. However, the public need to be informed and to possess the purchasing power to participate in this global phenomenon. Lack of this and other related infrastructure has brought about lopsidedness in the usage of ICT services, this difference is termed '*Digital Divide*'.

The first part of the 2011 study examined socio-economic influence on the ownership of computers and those connected to the internet, level of awareness of e-Commerce, willingness to trade on the internet, gender influence on e-Commerce and the influence of internet service subscription cost on the acceptance of e-Commerce. However, most of the variables did not have any significant negative influence on e-Commerce practice, but it was found that the lack of reliable information/awareness on what and how to practice e-Commerce were the major impediments on e-Commerce. This is followed by the cumbersome process of obtaining foreign exchange, bank transfer processes and the use of value cards and security issues.

The result of the analysis showed two contrasting ends: High tele-density, that is, very low divide in terms of ownership, usage of computers and connection to the internet; but very low tele-density, that is, relatively very high divide in terms of usage of the internet for trading in goods and services.

6. Conclusion

The trend in the 2011 study population showed that Nigerian socioeconomic status had little to do with the disparity in the attainment to practice e-Commerce. Instead, it was found that it's more of will-power and realization of e-Commerce importance and benefits. It was thus determined that Nigerians needed enlightenment and some form of motivation to avail themselves to trade on the internet.

Finally, while the 2011 study survey yielded an immediate practical applicability instrument, the result of the 2015 survey indicated possible changes in the Diffusion Theory processes and therefore.

7. Recommendations

This study supports earlier works on context of mandatory use of technology and seemingly redundancy of intention and use (Xu & Yuan, 2009; Linders, 2006; Mather, *et al.*, 2002). This is just a cross-sectional study representing only academics from few universities in one region of a single country. Therefore, it is recommended that more studies are needed to cover other sectors and also to include more countries and also recommends for further research on the relationship between The Diffusion Theory and practice.

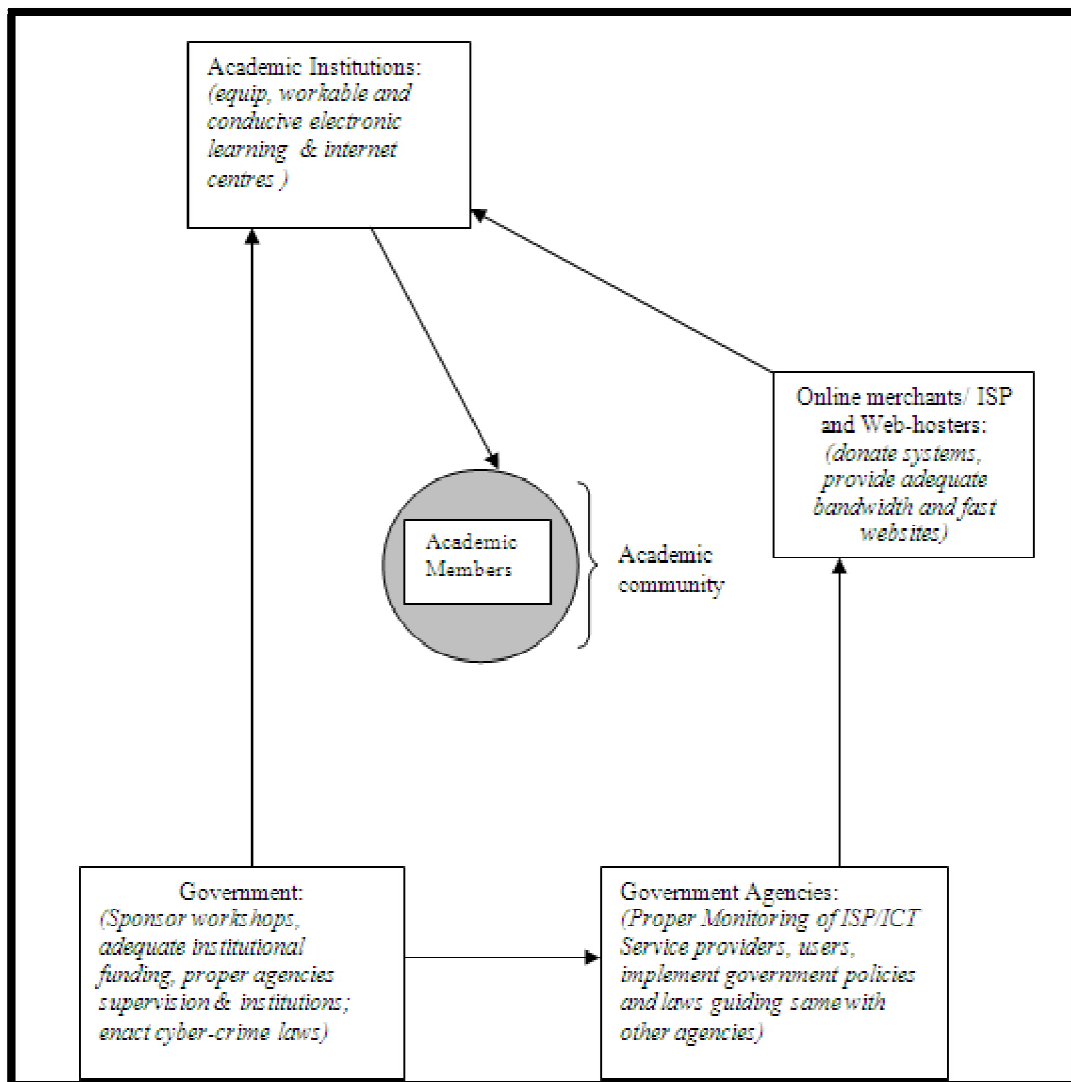


Figure 2: Concept Map to e-Commerce Practice
Source: Balami, (2011)

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