MOTIVATION FOR CONSUMERIZATION OF INFORMATION TECHNOLOGY (COIT): AN INVESTIGATION OF KNOWLEDGE WORKERS IN THE ROAD SECTOR IN KENYA

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DECLARATION

This is to certify that this research project is a product of my original research investigation and has not been presented for a degree award in any other university or institution of higher learning. Information from other sources has been acknowledged

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ABSTRACT

CoIT short for Consumerization of Information Technology is a trend which has been slowly adopted by most organizations due to employees demands. There are a lot of discussions and debates on the data security challenges posed by CoIT to the organization ICT resources. In this research, the focus was the motivating factors which lead employees to use personal technology for office work. To measure the motivating factors for CoIT, quantitative survey was carried out and the results analyzed using factor analysis and multiple regressions analysis. The study objectives were to establish the levels and usage patterns for CoIT, establish the motivating factors for Consumer technology and to establish the relationship between the intervening variables for consumer technology and CoIT.

The research model was derived from autonomy, continuous connectivity, innovativeness and competence as the motivating factors for CoIT. The results of the study demonstrate that employees motivation for adoption of CoIT is due to social status symbol , affordability, work related factors and freedom of usage in that order. The study also demonstrates that CoIT is majorly influenced by its ability to make the users feel competent to use the devices with autonomy. According to this study continuous connectivity does not majorly influence CoIT which can be explained by the fact that internet access is not necessarily free and poor network availability in Kenya.

Key Words: Consumerization of Information Technology (CoIT), Consumer Technology devices

Table of Contents

DECLARATION ii
ACKNOWLEDGEMENT iii
ABSTRACT iv
Table of Contents v
List of Tables viii
List of Figures ix
List of Abbreviations x
CHAPTER ONE: INTRODUCTION 1
1.1 Background 1
1.1.1 Consumerization of Information Technology 2
1.1.2 Motivation for Consumerization of IT 4
1.1.3 Usage Patterns and Levels 5
1.1.4 The Roads Sector in Kenya 6
1.2 Problem Statement 7
1.3 Objectives of the Study 9
1.4 Value of the Study 9
CHAPTER TWO: LITERATURE REVIEW 11
2.1 Introduction 11
2.2 Consumerization of Information Technology (CoIT) 11
2.3 Motivation for CoIT 13
2.4 Factors Contributing to CoIT 14
2.5 CoIT usage Patterns and Levels 15
2.6 Theoretical Perspective of CoIT 17
2.6.1 Self Determination Theory (SDT) 17
2.6.2 Switching Theory 18
2.6.3 Diffusion of Innovation Theory 19

2.6.5 Summary of Applicable Theories in CoIT _____ 19

2.7Empirical studies _____ 20

CHAPTER THREE: RESEARCH METHODOLOGY _____ 23

3.1 Introduction _____ 23

3.2 Research Design _____ 23

3.3 Population _____ 23

3.4 Sampling _____ 24

3.5 Data Collection _____ 25

3.6 Data Analysis _____ 26

CHAPTER FOUR: DATA ANALYSIS, FINDINGS AND DISCUSSIONS _____ 28

4.1 Introduction _____ 28

4.2 Background Information _____ 28

4.2.1 Respondents Age Bracket _____ 28

4.3 Consumer Technology Usage Patterns and Levels _____ 30

4.3.1 Use of the devise for office work _____ 30

4.3.2 Use of Consumer Technology for Office Work _____ 31

4.4 Motivation for Consumer Technology _____ 33

4.5 Characteristics of Consumer Technology _____ 35

4.6 Relationship between Consumerization of Information Technology and the Characteristics of Consumer Technology Devices. _____ 38

4.7 Discussion _____ 40

CHAPTER FIVE _____ 42

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS _____ 42

5.1 Introduction _____ 42

5.2 Summary _____ 42

5.3 Conclusion _____ 43

5.4 Recommendation _____ 45

5.5 Limitation of the Study _____ 46

5.6 Suggestions for Further Research _____ 46

REFERENCES _____ 47

APPENDICES _____ 51

List of Tables

Table 1: Study Population 24

Table 2: Sample Population 25

Table 4.1: Respondents age bracket 29

Table 4.2: Education Level of the respondents 29

Table 4.1: Extent of usage of Consumer technology for office work 31

Table 4.4: Motivation for Consumer Technology and factor loading 34

Table 42.5: Characteristics of Consumer Technology Devices 36

Table 4.6: Relationship between Consumer technology and characteristic of consumer technology devices 38

Table 4.7: Summary Output Table 39

List of Figures

Figure 1: Changes brought about by IT Consumerization. 12

Figure 2: Perceived Value of Mobile Devices for Work 14

Figure 3: Towards an IT Consumerization Theory: Theory and Practice 18

Figure 4: Conceptual framework 22

Figure 5: Use of personal technology devices for Office work 30

List of Abbreviations

CoIT -Consumerization of Information Technology

PWC – Price Water Coopers

CCK _ Communication Commission of Kenya

CEATV – Consumer Electronic Association Television

BYOD – Bring Your Own Device

HYOD – Here is Your Own Device

CYOD – Choose Your Own Device

COPE – Company Owned Personally Enabled

SDT – Self Determination Theory

CEO – Chief Executive Officer

ERP – Enterprise Resource Planning

MOTI – Ministry of Transport and Infrastructure

PPM – Push –Pull – Mooring

KeNHA – Kenya National Highway Authority

KERRA – Kenya Rural Roads Authority

KURRA – Kenya Rural Roads Authority

KRB – Kenya Roads Board

CHAPTER ONE: INTRODUCTION

1.1 Background

Technology today has become central in people's lives and consumer technology has gradually entered the work place blurring the line between home and work. People own or use more than one computing device in the work place including employer technology. This trend (use of personal technology in the work place) is what is referred to as Consumerization of Information Technology (CoIT) as coined by Moschella et al (2004). CoIT is today seen to play a potential role in improving business productivity and agility for the organization. The trend is also perceived to be more usable, available and reliable by Gartner (2005). According to Forbes (2012), CoIT should be seen as a new way of collaboration technology that integrates social computing by taking full advantage of consumer technology to streamline business processes and increase productivity. This trend can therefore not be ignored by any organization but rather should be seen as a strategic imperative in today's business operations due to its high adoption rate.

In the past, the diffusion of technology had been driven by organizations selling or buying new technology for their employees. Baskerville (2011) indicates that there has been a shift in the computerization process where private mobile devices (smartphones, tablets, laptops) are being used for business purposes. As a consequence, innovations are no longer top-down driven by the organization but rather bottom up driven by employees of consumer technology.

Searianu (2014), shows that many companies in Kenya today are allowing their employees to use their personal IT gadgets in the work place. Globally employees have made smartphones and tablets critical business tools with 44% of information workers

using smartphones to get office work done and 15% using tablets for office work as indicated by Forrester (2012). Global sales for smartphones grew to 46 % in the second quarter of 2013 while sales for feature phones declined to 21% (Gartner, 2013)

According to PWC (2011) social and collaborative technology such as Facebook, google and twitter have become part of today's daily lives. Technology has shifted from business process driven to consumer process driven. Consumers have been empowered by user friendly devices with wide price ranges to ensure affordability by all. This has seen a merger or both personal and work environment with even some employers expecting employees to be available 24/7. While some employees may not care much about the technology they use as long as it gets the job done, there is another group of employees who are technology savvy and will insist on using their preferred technology regardless of the rules and regulations. Different personalities have different perceptions and preferences on the same object. Perception is a result of experience(s) while preference could be perceived as an individual's attitude towards a specific object(s) reflected in decision making.

In Kenya, CCK Sector Statistics Report Q2 (2013-2014) reported that internet/data market segment was 13.1 million users representing 99% of all internet users in Kenya. This is an indication of the increase in the number of consumer technology users in the country and globally as other studies have shown; (PewResearch, 2014; Accenture, 2013; CEATV, 2014).

1.1.1Consumerization of Information Technology

Consumer devices come in various shapes and sizes from smart phones, notebooks, tablets, laptops. The flexibility brought about by these devices has increased

organizations employees efficiency by enabling “anywhere”, “anytime” and “anyhow” access to business data and systems.

CoIT gives office workers the freedom of choice on the device which best suits them including the latest technology. This trend is here to stay. Gartner predicts that by 2018, client computing will be heavy with CoIT devices. In this regard, most providers of enterprise technology solutions including Microsoft, Dell, and Cisco have made bold steps towards ensuring their solutions accommodate consumer technology. Cisco (2014) recognizes that BYOD continues to be one of the most influential trends reshaping the landscape of mobile enterprise and evolution of IT organizations and has gone to lengths to provide corporate solutions for addressing security challenges associated with CoIT.

Microsoft on its part has developed operating systems for tablets (Windows 8) and even acquired Nokia Corporation in its efforts to position the company for CoIT adoption in the work place. Microsoft Corporation; 2012 report on Consumerization of IT strategy, notes that CoIT is perceived as helping organizations to realize increased productivity and enhance workforce capabilities while maximizing IT investments.

According to D’Arcy (2011) on behalf of Dell Corporation, IT consumerization of the enterprise place has changed the relationship between employers and employees. The study notes that the following five trends have shaped the future of enterprise mobility; increase in social media , blurring of work and home environments, emergence of new mobile devices, the need for tech-savvy workers because of the shifting models and lastly the changing of employees expectations of the corporate IT. CoIT can therefore be seen as a key trend affecting the society as a whole including organizations of all sizes.

Schadler et al (2011) indicate that, most innovative employees are using personal devices, applications and cloud services to get critical work done as well as engage with customers;. The world has also seen an overall growth in the adoption of smartphones, tablets and other personal devices. Email is the most dominant application used in mobile devices. However while smart phones and tablets are complementing computers or replacing them for some applications, the desktop and the laptop computers still remain as critical work devices by Forrester(2012).

1.1.2 Motivation for Consumerization of IT

Consumerization of IT dates from when personal computers were first used to complete office work at home. According to Deloitte (2013) this trend has accelerated in recent years as smartphones and tablets have been accepted and adopted by most CEO's and beyond. Personal computing devices used for office work such as laptops, smartphones, notebooks, and tablets; are generally referred to as consumer devices. Consumer devices is the industry term used to refer to internet capable mobile computers that are made and marketed to individuals and not businesses. The main difference between consumer devices and enterprise devices being that consumer devices are personally managed by the owners.

The initial drive for consumerization of IT came from Chief Executive Officers (CEOs) due to their busy schedules, most CEOs adopted using smart phones and tablets to enable them work away from office whether on a journey or even in a meeting. This especially enabled many CEOs to check and respond to their emails from "anywhere" "anytime". However Mcquire (2012) notes that generation Y has adopted and pushed this phenomenon further, rising concerns which cannot be ignored. Generation Y refers to a

generation born between 1980's and 1990's which is perceived to be familiar with digital and electronic technology. Recent study by Forbes (2012), however show that the myth that CoIT is being pushed by generation Y is not true, rather most chief executives have been the driving force behind the trend.

Thornton (2012) indicates that CoIT has entered the work place because the work technology is perceived as 'museum technology'; (boring, ancient, slow, rigid) compared to consumer technology which is perceived as interesting, fast and easy to use. Though employees expect their employer to provide them with the right technology to perform their duties, if the employer is slow to provide the technology or provides 'museum technology', the same employees will not hesitate to bring their own technology to get their job done. Research by Forrester (2012) shows that most employees have better technology at home than they have at the work place.

It is evident that there has been a tremendous increase in consumer technology from literature review that consumers have extended the use of their devices to the work place resulting into the CoIT phenomenon.

1.1.3 Usage Patterns and Levels

A study by Accenture (2013) shows that though generation Y had been perceived to have been the ones behind the push and adoption of CoIT, older ages and C-suite executives have taken over the push for adoption of consumer technology in the work place. The main usage for CoIT according to IDC (2011) was noted to be emails followed by video conferencing, syncing of data and use of productivity tools such as word processors and spread sheets.

According to PWC (2011) 40% of devices used to access business applications were personally owned by knowledge workers. 49% of these users indicated that they used the devices for office work while on vacation and 47% indicated that they used their devices while travelling. Moschella et al (2014) argues that CoIT has become much more than BYOD and should be replaced by Bring-Your-Own-Technology (BYOT).

1.1.4 The Roads Sector in Kenya

This is a sector under the Ministry of Infrastructure and Transport (MOTI) consisting of several parastatals, semi-autonomous government agencies and departments in the ministry. Other players in this sector include the private sector consisting mainly of Road Contractors and Engineers. There are four parastatals in MOTI directly involved in road construction and maintenance which include; Kenya National Highway Authority (KeNHA), Kenya Urban Roads Authority (KURRA), Kenya Rural Roads Authority (KERRA), Kenya Roads Board (KRB) Kenya Roads Act (2007)

According to KRB (2014) the current road network stands at 160,886 kilometers of road. KeNHA, KURRA and KERRA are in charge of maintaining existing roads and constructing new roads. KRB is responsible for planning, funding and auditing fuel levy funds used for road maintenance.

Due to the nature of the work of the sub-sector, most employees are usually on the move many a times than in their work stations. This has prompted the need by most of them to have consumer technology devices especially smart phones and tablets to enable them access their office mails from the field. Also the use of web based ERPs and other

systems in the sector has made working away from the office a possibility thus an employee with a consumer technology device can work from anywhere anytime.

With an ambitious government plan to increase the road network by 10,000 kilometers within five years (MOTI Strategic Plan 2013-2017), these employees are likely to spent more time in the field and most likely to use their personal devices even more for work. The study will aim to discover what motivates and influences these employees choice of the various consumer technology they use in the fields and how specifically them use these gadgets

1.2 Problem Statement

Consumerization of IT is a consumer-led movement that is transforming the work place by extending the notion that 21st Century employees need to work from anywhere, anytime and on their own. These employees expect to work from both within their work place environment and outside their work place whether at home or on the road. According to Cognizant (2012) the CoIT trend holds huge potential to transform businesses, enable agility and encourage innovative ways of interacting with customers and business partners.

The trend therefore requires a holistic approach to maximise on its benefits. CoIT is a new concept in Kenya and though most employees are not familiar with the term, there has been an increase in the adoption and acceptance of consumer technology in most organizations (Kamau, 2013; Serianu, 2014). Locally CCK (2014) indicates that there has been a tremendous increase in the number of smart phones in the country with the number being estimated to be 13.1 million by December 2013 excluding tablets.

According to Kamau (2013) the use of consumer technology in the work place has a high impact on employees' performance; however there is need to further investigate the impact of CoIT on employee productivity. Niehaves et al (2012) show that CoIT has been triggered by consumers and their individual needs indicating that Information Technology/Information Systems needs to have a more inter-disciplinary focus on the subject rather than purely focusing on the technological framework. CoIT is multifaceted and deserves a multi-theoretical perspective to shed light on the important interplay between individual level interaction with technology and governance issues imposed by organizations Ruch and Gregory (2014). Dernbecher et al (2013) and Hopkins et al(2013)research on motivation for CoIT/BYOD amongst students found out that habits positively affected CoIT and students intentions to use consumer technology were influenced by parents, teachers and parents/guardians respectively. Hopkins et al (2013) specifically recommends expansion of their research work amongst more experienced persons in organizations which encourage usage of consumer technology in the work place as generalization of their research findings is not guaranteed. From literature review, it is evident that a lot has been done to discuss the security and governance issues posed by CoIT but very little on the psychological issues associated with the trend. Several empirical studies (Dernbecher et al ,2013; Niehaves et al, 2012; Ruch and Gregory, 2014), on CoIT and BYOD agree that what has been done so far on the subject is not conclusive enough due to the multi-faceted nature of CoIT and therefore more research work is needed to understand this phenomenon.

It is this research gap that informs this research study. This research will focus on the motivating factors behind CoIT, the usage patterns and levels of CoIT in the work place. The study aims to answer the questions; what is the motivation for CoIT? What factors influence a person's choice for consumer technology devices? What are the levels of CoIT in the work place and what are the usage patterns for CoIT in the work place?

1.3 Objectives of the Study

Specific research objectives:

1. To establish the levels of consumer technology in the work place.
2. To establish the usage patterns for consumer technology devices.
3. To establish the motivating factors which determine personal choice for consumer technology use in the work place
4. To establish the relationship between CoIT and the characteristics of consumer technology devices.

1.4 Value of the Study

This research study is aimed at first contributing to the body of knowledge. CoIT is a relatively new phenomenon and especially in Kenya. Other beneficiaries of the study will be organizations with knowledge workers and where use of IT is critical for the business as well as consumer technology device manufacturers and dealers. The creative industry such as media and advertising will also benefit from this study. CoIT is associated with most innovative and self-empowered employees who often improve or positively change business processes. This study will show employee's preferences and perceptions in

choosing a CoIT device. How and what they use the devices for and if these devices are of any significant benefit to the organizations.

Device and application solution providers such as Samsung, Apple, Lenovo, Dell, Techno, Microsoft, google among others will also benefit from the study as it will show consumer behavior towards purchasing the devices. The study will also attempt to discover users' desires as far as CoIT devices are concerned. With the predicted shift to increased CoIT adoption in the work place, CoIT manufacturers need to make devices which can be used for both personal and office work without the need to complement with other devices as is the case today.

The telecommunication industry is also another beneficiary of this study. Though CoIT might seem like a serious threat to this industry because of decline in price of commercial broadband services due to mobile telecommunication and the associated applications like skype, whatsapp, viber, facebook among others; the industry can leverage the fact that they are the custodians of customer data assets and provide innovative services to take advantage of CoIT.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

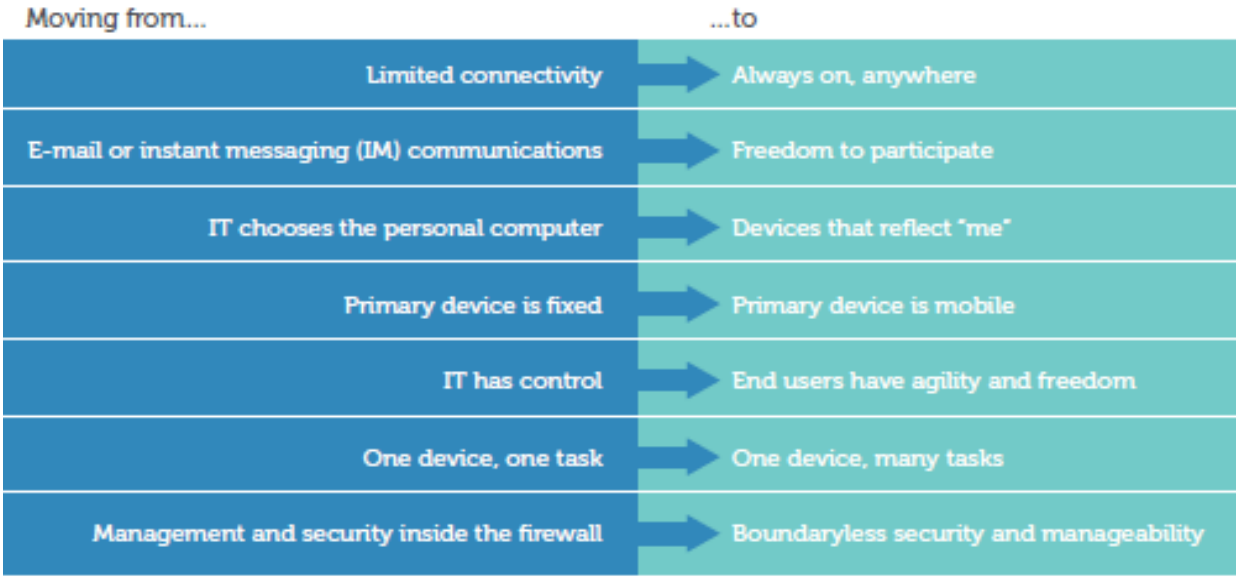
This chapter looks at Consumerization of Information Technology (CoIT) in details giving a brief history on the origin, patterns and current levels of CoIT. It also looks at motivation for CoIT and the factors which influence personal choice for Consumer technology devices. The study also looks at other research work on consumerization of IT with specific interest on motivation for CoIT. Finally the chapter will discuss the theories so far used in COIT and the relationship between CoIT and motivation for using consumer technology in the work place.

2.2 Consumerization of Information Technology (CoIT)

The CoIT trend has accelerated in the recent past as smartphones and tablets have become more affordable and popular. According to Deloitte (2013) the year 2012 saw a spike in CoIT interest with internet searches for BYOD reaching over four million. Historically IT departments have procured, developed, tested and supported the organization technology. However this has changed with employees bringing their own consumer technology in the work place and expecting to be connected to the organizations resources. This trend is what has come to be referred to as bring-your-own-device or consumerization of IT as indicated by Harris, Ives and Junglas (2012). Different organizations have taken different strategies in adopting CoIT as follows; here is Your Own Device (HYOD); organizations in this case provide devices to their employees. Choose Your Own Device (CYOD); in this case organizations provide a number of devices for their employees to choose from. Bring Your Own Device (BYOD); employees in this scenario bring their own devices or the organization provides

financial support for employees to purchase their devices. And lastly On Your Own Device (OYOD); employees are allowed to bring their own devices with no support from their employer. These four strategies help organizations strike a balance among the benefits, the risks and the controllability of the devices when choosing the best CoIT strategy as shown by Ghosh et al (2013)

Figure 1: Changes Brought About by CoIT. Adopted from, Changes Brought about by Consumerization of IT by Dell Power Solutions, 2011. Issue No. 2



The above figure illustrates the changes facing organizations as a result of consumer technology in the work place. Therefore; for any organization with knowledge workers, CoIT and the rethinking of employees' technology is the basis for the next wave of business, management and employee change. It is becoming necessary to change the relationship between the IT department and the end users. According to Dell (2011) this will enable employers to attract talent, execute new business models and improve competitiveness.

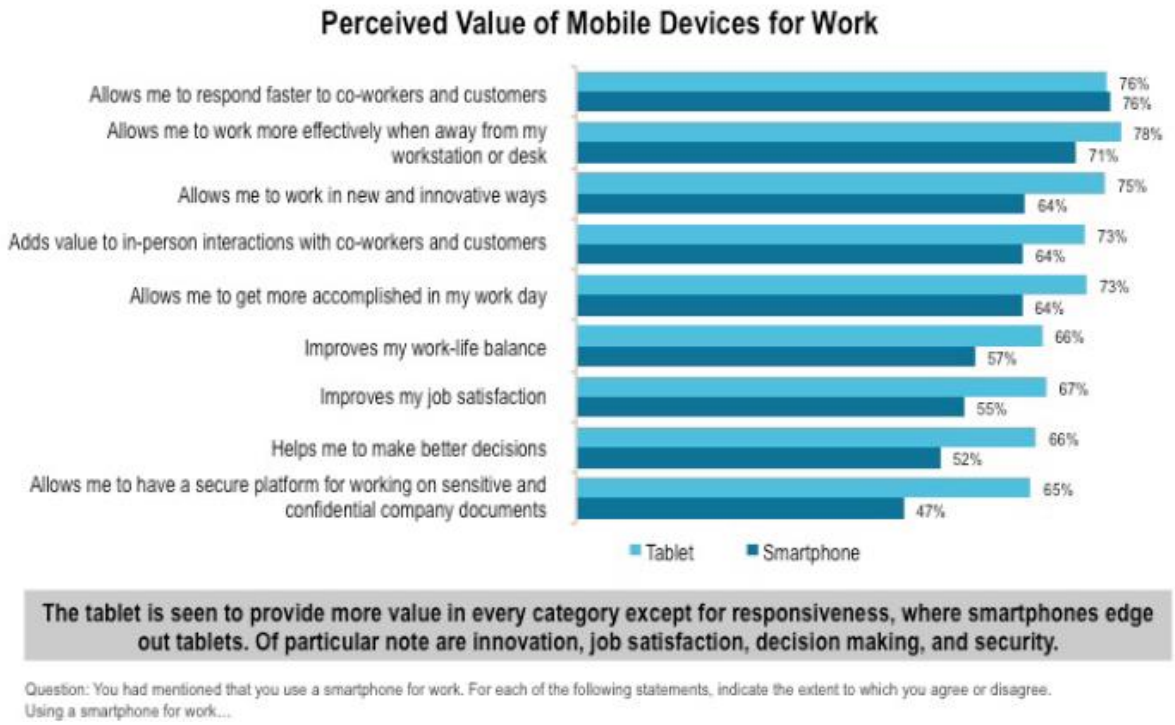
2.3 Motivation for CoIT

InfoWorld (2012) indicates that the increase in consumer technology and the explosion of the World Wide Web (WWW) in the recent years have resulted in a major shift in information technology with IT becoming user driven. Modern technologies such as social networking, cloud computing and mobile technology have shifted technology away from terminals to the users. As Information Technology devices (smart phones and tablets) have become cheaper; consumers' desires for more productivity and friendlier user devices have increased. This has seen many employees opting to use their own devices for office work instead of company devices (Garcia and Silva, 2013).Gen et al (2011) stipulate that because of the increased efficiency of consumer technology and their affordability users have become more dependent on these devices. According to Holmes (2011), people feel the need to be more permanently connected with each other and to communicate with friends, family and co-workers hence, forming what some people have come to refer to as 'virtual' lives. Intel (2013) predicts that by the year 2020, there will be over 20 Billion devices permanently connected and another 150 Million intermittently connected.

Productivity is perceived as the major driving force behind the CoIT revolution which has inspired many organizations to adopt the trend and employees encouraged to purchase consumer technology for office work by Cisco (2013). A study by Ovum shows that almost 70% of employees who own smart phones and tablets chose to use them in the work place. A global survey of 4,371 by the same firm found out that 60% of full time employees had consistently used consumer technology at their work place in 2011 and 2012. Of the CoIT devices, the tablet market has continued to grow with personally

owned tablets by Full time employees at 44.5% (ReneMillMan, 2013, 3rd June). Figure 2 below shows the perceived value of mobile devices at the work place with efficiency, working away from office, innovation, collaboration and productivity being rated highest.

Figure 2: Perceived Value of Mobile Devices for Work. Adopted from, Cisco - Mobile Devices Enable Efficiency, 2013, White Paper



2.4 Factors Contributing to CoIT

Consumerization of IT was originally embraced by chief executives due to their busy schedules and employees who were dissatisfied by employer technology. This trend gradually became a threat to organizations due to their unprepared IT infrastructure. However employers have come to accept CoIT because of its popularity especially the iPhones and iPads as indicated by Moschella et al (2014).

Blount (2011) shows the major contributing factors for CoIT can be attributed to; the huge growth in the use of consumer technology for business use. Another is the massive

popularity of social media with applications such as twitter, YouTube, Facebook, LinkedIn, google talk and many more such applications have majorly contributed to the explosion of CoIT. These applications/technologies are being by business to interact with customers resulting to increased customer satisfaction, increased customer loyalty, increased revenue and generally better, yet simpler marketing tools. Another contributing factor for CoIT has been the strong growth and use of cloud based services for greater efficiency of IT processes.

Many organizations initially resisted CoIT but have gradually accepted and are learning and adopting IT processes which can support consumer technology such as web based systems/applications. However recent studies also show that 20% of organizations consider themselves to be against BYOD an indication of acceptance of CoIT in the work place as reported by Moschella et al(2014).

2.5 CoIT usage Patterns and Levels

Accenture (2013) stipulates that the demand for consumer technology has remained high due to their multi-functionality and willingness by consumers to experiment. In their study done in the UK, US, South Africa, Brazil and Asia, smart phones and tablets purchase intentions had accelerated contrary to the decline of most single function devices. This was attributed to the fact that most consumers had shifted activities such as watching movies, photography, videography, reading among other to these devices instead of the traditional devices such as TVs, cameras and paper books.

In July 2014, the Consumer Electronics Association (USA) study reported that smart phones and tablets represented 35.1% of the total consumer electronics industry.

PewResearch (2014), showed that; 58% of American adults owned smart phones, 32 % owned e-readers and 42% owned tablets. Closer home, CCK Sector Statistics report Q2 (2013-2014); indicated that internet/data market segment was 13.1 million users representing 99% of all internet users in Kenya.

Recent research in Europe show that BYOD has reached a plateau with the main reason being that most employees expect their employers to pay for their devices which have become a primary tool for accessing company data and systems (Kaneshige, 2014, July 23). Employees no longer want to pay for their smart phones, tablets and laptops but rather want easy to use devices which they can use for both office work and personal work. This has seen the emergence of "Company Owned Personally Enabled" (COPE) which is a hybrid of company owned and BYOD but without the strict company rules forbidding personal use (Kanishige, 2014, January 8). However in the USA, BYOD has taken off quite well with 68% of organizations supporting the trend (Kaneshige, 2014, July 23).

According to Moschella et al (2014), Consumerization of IT is now in its third phase; post-PC era driven by applications specific devices, wearable technology, sensors and the rapidly evolving 'internet of things'. The researchers indicate that we are in times of heightened innovations being led by do-it-yourself generation, where organizations need to integrate CoIT in their strategy and treat technology users as stakeholders. CoIT can no longer be considered to be about new devices but about the entire relationship between IT departments and their users as indicated by Blount (2011). Software applications, networks, internet services and individual learning have become equally important for CoIT.

2.6 Theoretical Perspective of CoIT

Empirical studies on Consumerization of IT have adopted various theories in an effort to explain and understand CoIT. In this study the researcher will mainly focus on Self Determination Theory, Diffusion of Innovation Theory and the Switching Theory.

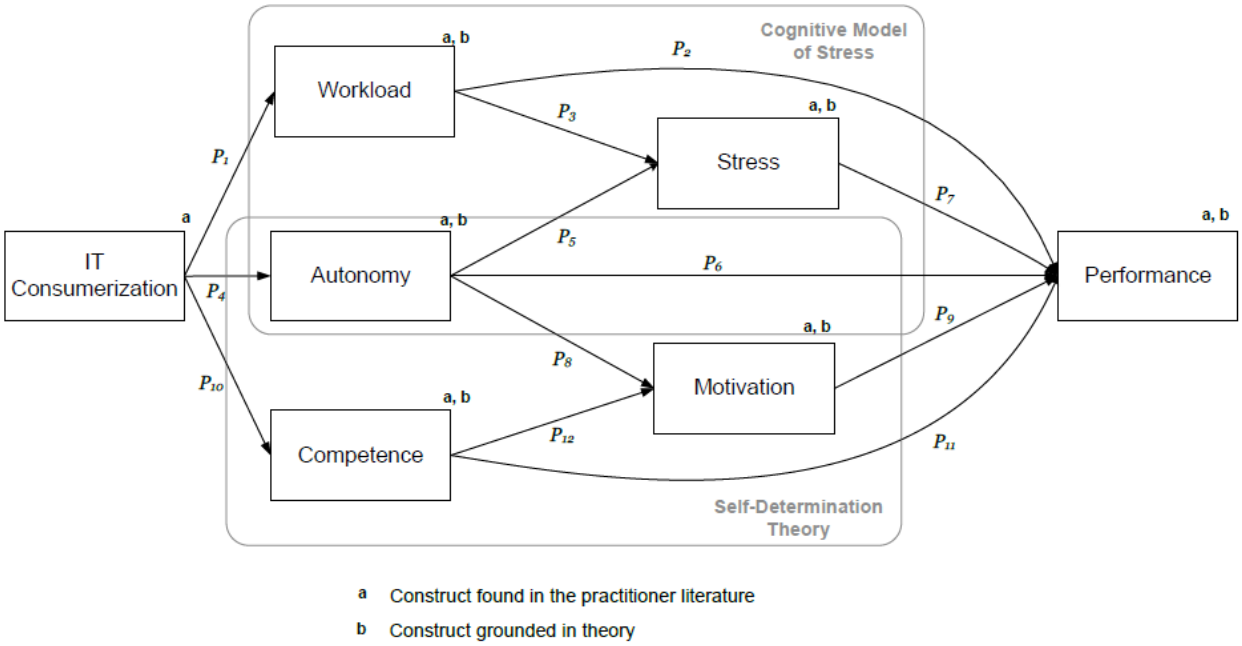
2.6.1 Self Determination Theory (SDT)

Deci and Ryan (1991) Self-Determination Theory, is a humanistic theory of motivation and well-being. The theory addresses competence, autonomy and psychological relatedness as the optimal conditions in which tendencies are enacted. When these conditions are satisfied, individuals exhibit optimal motivation and well-being. Otherwise when these needs are not met, individuals experience deficits in both motivation and well-being.

CoIT affects users' autonomy and choice to select and use IT tools in the work place. This autonomy is perceived to enhance work performance because users select devices and applications which they are familiar with and are able to use them more productively (Cisco, 2011; Dell, 2011; Intel, 2011). From a psychological perspective, the relationship between autonomy and performance can be explained using Self Determination Theory (SDT). The Theory in research has been applied in establishing how controlling versus autonomy-supportive environment impact functioning and wellness as well as performance persistence. The theory according to Deci and Ryan (2000), occupies a unique position in psychology as it addresses not only the central question of why people do the things they do but also the cost and benefits of various ways of socially regulating or promoting behavior.

In the context of CoIT, users will tend to use consumer technology in the work place because they feel competent using their own familiar gadgets and also they feel they have autonomy on their devices. Hence the motivation for introduction and adoption of consumer technology in the work place. Figure 4 illustrates autonomy and competence as motivating factors for CoIT which results into increased performance.

Figure 3: Effects of IT Consumerization. Adopted from, Towards an IT Consumerization Theory: Theory and Practice by Niehaves et al, 2012



2.6.2 Switching Theory

Bensal et al (2005) indicate that switching theory when used to explain CoIT builds upon the migration theory of humans physically changing location. The Push-Pull-Mooring (PPM) switching model which predicts that negative factors at the origin push customers away, positive factors at the destination will attract customers and pull them towards a superior product. Mooring effects either inhibit or facilitate the migration of consumers

towards superior services. Social influences and switching cost are some examples of influencing factors for switching behavior.

According to Dernbecher et al (2013), research shows that when using an incumbent technology, habitually the user will less likely switch to a substitute product. As far as consumer technology is concerned, users will more likely stay with their own technologies and only try to switch from their current system to their employer's system when necessary.

2.6.3 Diffusion of Innovation Theory

Robison (2009) in diffusion of innovation seeks to explain how innovations are taken up in a population. Innovation can be defined as a new way of doing things or the application of better solutions that meet new requirements. Diffusion of innovation theory sees change as about the evolution or re-invention of the products or behaviors' which make better fits for the needs of the users. The theory is about the innovations themselves and not people changing to adopt the change. Diffusion researchers have broken down the population into five segments based on the populations propensity to adopt an innovation as follows; Innovators, this is the small group of visionary, imaginative innovators willing to bet on the innovation. Innovators are necessary for any new innovation to succeed. Other groups are the early adopters, early majority, late majority and laggards.

2.6.5 Summary of Applicable Theories in CoIT

Consumerization of IT has been driven by innovative consumer technology which has motivated users to replace or substitute enterprise IT with personal IT. Switching theory in CoIT relates the benefits of switching from enterprise IT to personal IT and concludes

that this is a motivating factor for CoIT. While Diffusion of Innovation theory when used to explain CoIT looks at how users adopt new innovative consumer technology for office use. When SDT is applied in CoIT, the theory looks at the motivating factors for the phenomenon. It addresses competence, autonomy and psychological relatedness as the optimal conditions in which CoIT is adopted. Therefore SDT will be most suitable theory applied in this study to answer the research objectives.

2.7Empirical studies

Empirical studies on CoIT show that behavioral intention, performance expectancy, personal innovativeness; self-efficacy and social influence positively affects use of consumer technology. Studies also show that more and more consumer technology will continue to be used for business purposes and therefore CoIT has become an important aspect of business strategies as well as a research topic (Loose et al, 2013; Dernbecher et al, 2013)

Hopkins et al (2013) found out that consumer technology among New Zealand students was perceived to be easier to use and compatible with their learning tasks. Students' intentions to use CoIT devices were found to be influenced by peers, teachers and parents/guardians. Their study concluded that behavioral intentions to use consumer technology is majorly influenced by people's attitude and moderately influenced by their subjective standards and perceived behavioral control.

Koch and Curry (2014) in their ongoing research in the US of three major companies, the research has so far has revealed that; people choose to bring personal devices to the work place because these devices are perceived to offer comfort, convenience, increased productivity and other intangible benefits. Organizations have adopted CoIT by

upgrading their IT infrastructure in support of CoIT. Also these same organizations have shifted from the traditional cost saving IT projects to value adding projects by adopting CoIT

Dernbecher et al (2013) show that there is a significant positive influence of self-efficacy and personal innovativeness on the habit of using consumer technology for daily studies. Habits positively affects consumerization of IT; a confirmation consistent with literature review. Habits being defined by Limayen et al (2007) as automatically performed behavior. Also switching intention has a positive influence on switching behavior (use of technology the user had switched to).

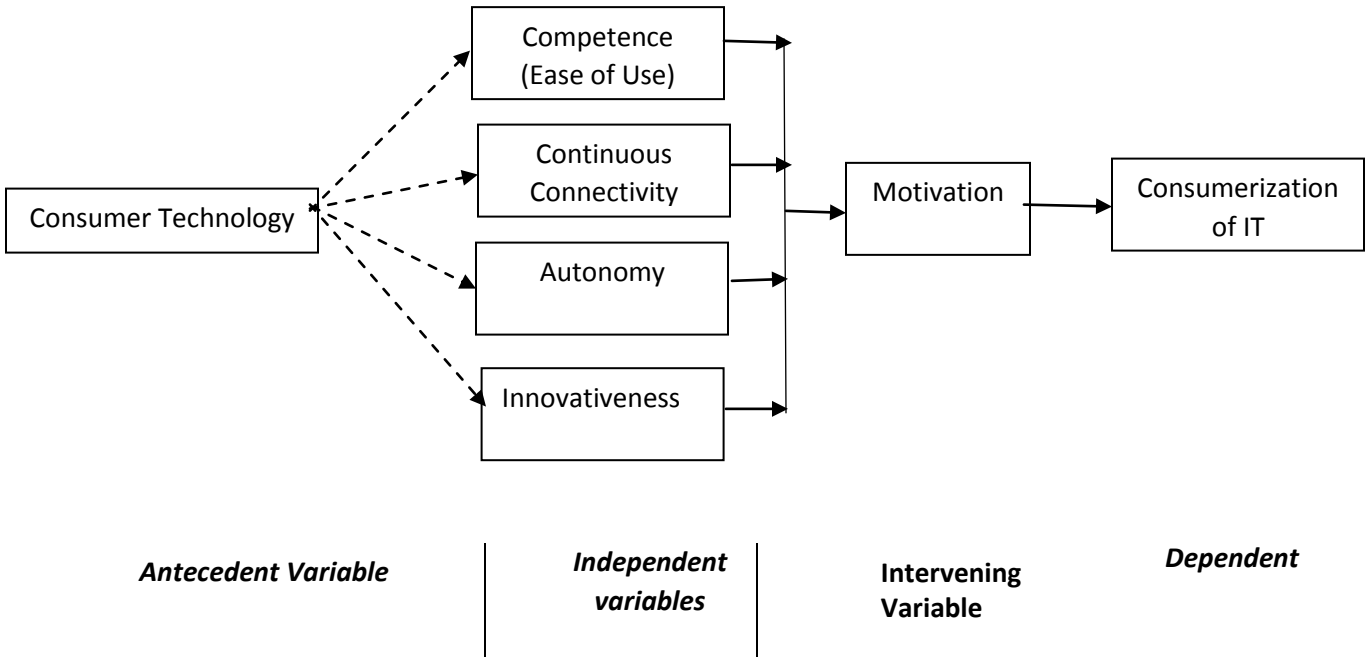
Locally there are unpublished studies on BYOD showing that most organizations have accepted and adopted the phenomena. 95% of organizations allow their employees to use consumer technology for business purposes with emails, file storage and marketing applications being some of the main uses as indicated by Mbalanya (2013). Another study shows that BYOD is perceived to increase employee's productivity (Kamau, 2013). BYOD challenges and especially security issues need to be properly addressed since the trend cannot be wished away (Kamau, 2013).

While Kamau (2013) advocates for more research work on the challenges facing BYOD, there has been no evidence of local empirical research work on the psychological issues associated with consumer technology in the work place hence the research gap this study intents to address.

2.8 Conceptual framework for CoIT

The conceptual framework has been adopted from Niehaves et al, (2012). CoIT has been driven by employees using consumer technology for business purposes. This has been motivated by various factors which include perceived ease of use, perceived capability for continuous connectivity, perceived autonomy and perceived increase in innovativeness.

Figure 4: Conceptual framework



CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the methodology that was used in the study. Kothari (2004) defines research methodology as the systematic way of solving the research problem. This chapter describes the research design, population of the study, sample size, sample design, data collection method, and the data analysis techniques that was used in this study.

3.2 Research Design

This is the blue print for data collection, measurement and analysis (Kombo and Tromp, 2013). This study used descriptive cross-sectional research design. According to Cooper and Schindler (2006), a descriptive study is concerned with the description of the phenomenon or characteristics associated with the subject population, discovery of the association among different variables and estimates of the proportion of a population that has these characteristics.

3.3 Population

Cooper and Schindler (2006) describe a population as the total collection of elements whereby references have to be made in order to sufficiently address all the study objectives and the research questions. The researcher aimed at conducting a survey of Nairobi based knowledge workers of the parastatals in the public roads sector, specifically KeNHA, KURRA, KERRA and KRB. The selection of these firms for the study is informed by the fact that the firms do a lot of field work and they have implemented various ICT systems for road management and maintenance and other ICT

solutions to increase efficiency in the sector as well as to comply with government requirements.

Table 3.1: Study Population

Strata	Population	Target Population
KRB	65	30
KeNHA	400	60
KeRRA	700	70
KuRRA	300	40
Total Population	**1365**	**200**

3.4 Sampling

According to Kombo and Tromp (2013) sampling is the process of selecting a number of individuals or objects from a population such that the selected sample represents the characteristics of the entire group. The study sample was 127 knowledge workers from the target population; However 185 questionnaires were distributed to increase the probability of user response. The sample size figure has been adopted from Krejcie and Morgan table1 (1970). The purpose of sampling in this study was to lower costs, increase the speed of data collection and availability of the population elements (Cooper and Schindler, 2006).

The study used proportionate stratified sampling. This ensured that the various categories of knowledge workers in the sample population will be represented. According to Kombo and Tromp (2013) this sampling method is appropriate when the researcher is interested in issues related to gender, race or age disparities in the population. CoIT is a trend that has been majorly associated with generation Y and therefore age an important consideration factor.

Table 3.3: Sample Population

Strata	Target Population	Percentage	Sample Size
KRB	30	15%	21
KeNHA	60	30%	42
KeRRA	70	35%	49
KuRRA	40	20%	28
Totals	**200**	**100%**	**140**

3.5 Data Collection

The study used primary data collected by way of closed-ended structured questions and a few open-ended questions. This enabled the researcher to gather authentic and objective data from the source. The researcher aims to collect data using self-administered questionnaires.

Most employees in the target population are frequently out of their offices hence self-administered questionnaires the best option. The questionnaires were designed in a manner to answer the research objectives; Section A on demographics, was to capture respondents age group, gender and education level. Section B answered questions related to CoIT usage patterns and levels while Section C answered questions pertaining to the motivation for CoIT. Section D answered questions relating to factors determining personal choice for consumer technology.

The research instrument was tested for reliability and validity before being administered to the respondents. This was done by administering the questionnaire to test respondents to establish ease of use of the instrument. Feedback from the test respondents was used to improve the questionnaire for reliability and validity.

3.6 Data Analysis

Kombo and Tromp (2013) define data analysis as the process of examining the collected data in order to make deductions and inferences. This process involved various stages. The nature of the data collected was both quantitative and qualitative in nature. The completed questionnaires were checked for completeness and consistency. Data was coded, checked for errors and omissions. Responses were tabulated and coded.

Qualitative data collected in all sections was analyzed using content analysis method to determine the presence of certain key words or concepts within the text. Quantitative data collected was analyzed as follows; Objective (1) and (2) data was analyzed using descriptive statistics to establish consumer technology usage levels and patterns in the work place.

Objective (3) data was evaluated using factor analysis. Principal component analysis and Varimax rotation was used as the variable reduction techniques. According to Cooper and Schindler (2006), factor analysis main objective is to reduce to a manageable number the many variables that belong together and have overlapping characteristics.

Objective (4) data was analyzed using multiple regression data analysis model to determine the key drivers of consumer technology for CoIT. Multiple regressions is a descriptive tool used to evaluate the contribution of variables to a phenomenon as explained by Cooper and Schindler (2006)

The Regression Model for objective 4

$Y = \beta 0+\beta 1X1+\beta 2X2+\beta 3X3+\beta 4X4+\varepsilon;$

Where: Y - is the dependent variable – (Consumerization of IT)

X1-4–Consumer technology Variables (Competence, Innovativeness, Continuous Connectivity and, Autonomy)

$\beta 0$ – is the constant

$\beta 1\text{-}4$ - are the regression coefficients or change induced in Y by each X

ε - Is the error.

This study focused on what motivates employees to use consumer technology for office work, and the factors influencing the choice of consumer technology devices and their use in the work place (CoIT). The researcher explored answers from the study based on the research objectives to show the usage levels and patterns for Consumerization of IT. This study also aimed to establish the relationship between motivation for consumer technology and CoIT and how each of the characteristics of consumer technology devices influences consumerization of IT.

CHAPTER FOUR: DATA ANALYSIS, FINDINGS AND DISCUSSIONS

4.1 Introduction

The research objective was to establish motivation for consumerization of information technology (COIT) of knowledge workers in the road sector in Kenya. This chapter presents the analysis, findings and the discussion with regard to the objective. The analysis is presented in mean and standard deviations while the findings are presented in frequency distributions and tables.

4.2 Background Information

The demographic information considered in this study included the age group of the respondents, and there highest educational level. A total of 185 questionnaires were issued out. The completed questionnaires were edited for completeness and consistency. Of the total questionnaires distributed, 123 were returned. The returned questionnaires' represented a response rate of 66% and this response rate was deemed to be adequate in the realization of the research objectives.

4.2.1 Respondents Age Bracket

This section of the questionnaire sought to establish the ages of the respondents since it is expected that the employees that are young are likely to be well versed with the usage of the information technology devices and their uptake will be differing compared with those advanced in their age. Table 4.1 below represents the results of the respondents' age bracket.

Table 4.1: Respondents age bracket

Years	Frequency	Percent	Cumulative Percent
18 – 25 Years	12	9.7	9.7
26- 35 Years	45	36.6	46.3
36 - 45 Years	51	41.5	87.8
Above 45 Years	15	12.2	100.0
Total	123	100.0	

The findings above indicate that 41.5% of the respondents were between 36 and 45 years while 57% were under 35 years old. On average, majority of the respondents are less than 45 years. This therefore means that most of the respondents were still in secondary or college education when the information technology explosion started in the late 90s and early 2000 and consequently be able to adapt the same much easily. The findings also indicates that this group of respondents will be valuable in the current research since they fall in the age group that have a fast uptake of consumer devices such as smart phones, notebooks, tablets, laptops which is the focus of this research (MSK, 2013).

Table 4.2: Education Level of the respondents

Education Level	**Frequency**	**Percent**	**Cumulative Percent**
College Certificate	6	5	5
College Diploma	27	22	27
Bachelor's Degree	57	46	73
Master's Degree	33	27	100
Total	123	100	

The findings above shows that majority of the respondents had attained the bachelor's degree (46%) followed by master's degree with (27%). Only 29% of the respondents had not attained university education. From the results above, it shows that majority of the

respondents were in a position to answer the questions appropriately based on their education competence and also the use of consumer technology devices.

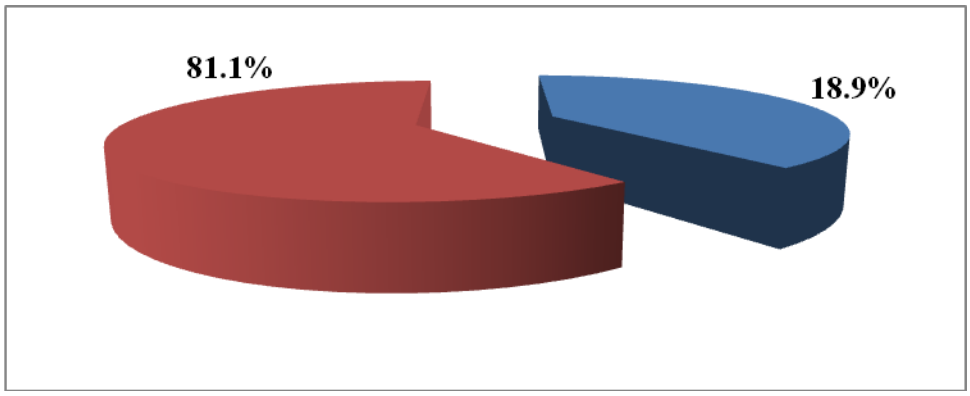
4.3 Consumer Technology Usage Patterns and Levels

This section of the questionnaire sought to determine whether the respondents owned any form of consumer technology devices, the brand of such devices, usability of the device and the functions that the consumer. On the question of whether the respondents owned a consumer technology device, all the respondents answered to the affirmative.

4.3.1 Use of the devise for office work

The ownership of the consumer technology device by an employee might be for personal use of for office work. On being asked whether they use these devices for office work, the results shows that majority of the respondents (81.1%) use personal technology for office work.

Figure 5: Use of personal technology devices for Office work



The respondents noted that they use consumer technology devices to perform both office work and personal work. Employees in the road sub-sector have adopted the use of private technology for business purpose. These findings concur with Serianu (2014) that there has been an increase in the acceptance and adoption of CoIT devices in the work place in Kenya. Also literature review indicates that CoIT cannot be ignored but rather be

regarded as a strategic objective. Robinson, Faris and Wind (2007) observed that IT applications are considered strategic and their adoption enabled organizations to gain competitive advantage over their competitors.

4.3.2 Use of Consumer Technology for Office Work

An organization policy will affect the usage of the IT devices. The respondents were asked to indicate the extent to which they use consumer devices for office. Since the consumer devices being used by the employees vary, the respondents were to indicate against those devices that they only use for office work and also how they use these devices for the same. The results are presented in the table below.

Table 4.4: Extent of usage of Consumer technology for office work

	Mean	Std. Deviation
Emails	4.4358	0.81201
Word Processing	3.9174	1.30423
Spread sheets	4.2264	1.33937
Power Point Presentations	2.9057	1.21314
File Storage and retrieval	3.7453	1.25431
Access to web based business Applications such as Enterprise Resource Planning (ERP), intranet	3.9811	1.37967
Client Relations using social media	4.1283	1.21851
Video Conferencing	1.6792	.87208
Data processing	3.0377	1.32958
Photography	2.8491	1.00759
Navigation	2.4615	1.09296
Geospatial Data collection, update and validation	2.5472	1.30923

Identification of roads	2.9245	1.28376
Overall Mean	**3.2953**	

The respondents use personal technology devices for use for various purposes as indicated in the above table. The findings shows that the popular usage of the consumer devices in the sector is on email (mean=4.4358) and spreadsheets (mean= 4.2264). The management of client relations using social media (mean=4.1283). This category of usage is found to be related to social media and as D'Arcy (2011) rightfully observed that application that does not require support from employers is found to be popularly used by the employees. In addition, since Information Technology devices (smart phones and tablets) have become cheaper; employees will increasing opt to use their own devices for office work instead of company devices (Garcia and Silva, 2013) and this is why this finding supports this claim by the researchers. However, the findings also show that there is moderate usage of the consumer devices by the employees for functions such as video conferencing (mean=1.6792), navigation (mean=2.4615) and Geospatial Data collection, update and validation (mean= 2.5472).

This finding shows that the employees use less of their consumer devices to perform tasks that are related to the ministry. Instead the findings suggest that the respondents majorly use the devices for social networking. The devices assist the employees to respond faster to co-workers and customers as well as work away from home and deliver on the job. On the question of where the consumer devise is used majorly, the results findings were that it is used in the office, at home, safari and in the fields. This findings support Gen et al (2011) observation that because of the increased efficiency of consumer technology and their affordability, users have become more dependent on these devices.

The need to be more permanently connected with each other and to communicate with friends, family and co-workers is another reason why the respondents use the CoIT devices in the areas identified and this will be consistent Holmes (2011) position that consumer devices have converted the users to virtual life.

Majority of the respondents (81.1%) indicated that they intend to continue using the personal technology for office work. The reasons given for the continued use of the devices was found to depend on the age bracket of the respondents. Most of the respondents aged less than 45 years old indicated that consumer technology devices allowed them the freedom to carry out various activities at the same time in most of the time, to carry pending work to the house and accomplish many tasks at the same time. On the other hand, respondents aged more than 45 years indicated that ownership of the consumer devices allowed the employees to interact with customers resulting to increased customer satisfaction, increased customer loyalty, increased revenue and generally better, yet simpler marketing tools

4.4 Motivation for Consumer Technology

The third objective of the research was to establish the motivating factors which determine personal choice for consumer technology use. Towards the determination of the same objective, measurement scales were developed, tested and applied using factor analysis. The problem definition scale contained work related items that emanate from the organizational level and individual employee level that contribute to the usage of consumer technology. The scale was tested for both construct loadings and reliability, and the scale and its subscale items proved to have high loadings (> 0.5) and high reliability Cronbach's α (> 0.7).

The instrument constructs, corresponding items, their factor loadings, and construct reliability are presented in Table 4.4

Table 4.4: Motivation for Consumer Technology and factor loading

Factor	Item	Factor Loading	Cronbach's α
Work related Factors	Tasks done faster	**0.767**	0.890
	Office work is made easier		0.724
	Work life and personal life		0.832
	It rarely breaks down		0.724
	Facilitates multitasking		0.723
	Continued use of the device		0.687
Freedom of Usage	More discretion in usage	**0.754**	0.813
	Extended coverage		0.784
	I enjoy working on my device		0.721
	No support required from IT depart.		0.823
Affordability	I can buy the device without straining	**0.795**	0.792
	I am willing to pay for the devise		0.737
	I plan to upgrade my device within a year		0.662
Status	I can express myself on social media	**0.823**	0.821
	My device is small and convenient		0.727
	My peers admire my device		0.804
	My devise is a symbol of status		0.735

Notes: Extraction method: principal components analysis; rotation method: varimax rotation with Kaiser Normalization.

Source: Constructed from the Research Data

From the findings in table 4.4 the items that affect the motivation for use of consumer technology devices for office work were found to be work related factors, freedom of

usage, affordability and status. The highest factor loading was found to be the social status with which these consumer devices are associated with. The ownership of such devices as laptops, smart phones, notebooks, and tablets is perceived by majority of the respondents as a indication of increased social status thus a factor loading of 0.823. The lowest factor loading was registered on freedom of usage that results from the use of the consumer devices (factor loading 0.754). This can be explained by the nature of work undertaken by the respondents which involves travelling to remote places which may have poor or no internet coverage. Affordability was found to have the second highest loading factor of 0.795. Most respondents indicated that they were willing to pay for their devices and were also planning on upgrading their devices within a year. This could be explained by various factors which this research work did not seek to find out which could vary from employer facilitation to purchase the devices or good economic standing of the respondents. The 3rd motivating factor for CoIT was found to be work related factors with a factor loading of 0.767. Such factors include mixing work and personal activities which enables the respondents to multitask, reliability associated with consumer technology devices. The respondents indicated that their personal devices hardly broke down unlike the office technology.

4.5 Characteristics of Consumer Technology

The characteristics of the consumer technology device will influence the level of consumerization of information technology. This section of the questionnaire sought to establish the characteristics of consumer technology devices that motivated the respondents to this technology for office work. According to literature review, the characteristics of consumer technology devices that were considered to be the driving

force behind CoIT and that were adopted in this research work included the level of competence, continuous connectivity, innovativeness and autonomy. The results are presented in table 4.5 below.

Table 4.5: Characteristics of Consumer Technology Devices

Competence	Mean	Std. Deviation
I can easily access office work using my device(s)	3.5283	1.23419
I have the skills and abilities to make use of my device(s)	4.0377	0.96001
I easily set up my device(s) for use without asking for IT assistant	4.3491	1.03095
I easily install applications/software on my device(s).	3.8868	1.21940
I can easily solve problems on my device(s) without asking for IT department assistant.	3.9245	1.05337
I can easily connect to the Wi-Fi to access network and internet services on my device(s)	4.0755	1.08927
Overall Mean	**3.970**	
Continuous Connectivity	Mean	Std. Deviation
My work requires me to be online all the time	2.6981	1.16989
My social life requires me to be online all the time	2.5472	1.26439
My device(s) enables me to be online all the time	3.5472	1.11917
Overall Mean	**2.931**	
Innovativeness		
	Mean	Std. Deviation
I easily discover how to use my device(s) without any one showing me how to use it.	4.0755	1.05337
I easily experiment with new applications on my device(s).	3.9057	1.11397
I always try to find out my device(s) capabilities on my own.	4.0943	.92537
I focus better on my work when using my device(s)	3.0189	1.24793
I plan to replace my device(s) within one year	3.1509	1.39223
Overall Mean	**3.6491**	
Autonomy	Mean	Std. Deviation
Using my device(s) allows me to work from any where	4.0189	.88775
Using my device(s) allows me to work independently	3.8302	1.08727

I can easily access office work on my device(s)	3.7736	1.15428
Having my device(s) gives me flexibility of working hours	3.5472	1.32384
It is up to me to learn how to use my device(s)	4.1887	.94170
It is up to me to repair my device(s)	3.8679	1.24093
It is up to me to replace device(s)	4.1321	1.14418
Overall Mean	**3.9084**	

From the findings in the table above, the dominant characteristic of the consumer technology devices that affects consumerization of information technology is the competence level of the devices which enables the users to perform various tasks without the need to be trained or to ask for user support (overall mean=3.97) and the autonomy of the device to allow the user to work from anywhere (overall mean= 3.9084). On the other hand continuous connectivity was found to be the least characteristic that affected the uptake of consumer technology devices by the respondents. The high ratio weighting received by the competence level of the device is because of the premium placed by the users for the device to offer comfort, convenience, increased productivity and other intangible benefits. These findings are consistent to that of Koch and Curry (2014) who suggested employees choose to bring personal technology to the office because of convenience, comfort and other intangible benefits which are perceived to increase employees moral. This trend has thus prompted organizations to shift from the traditional cost saving IT projects to value adding projects by accepting and adopting CoIT.

4.6 Relationship between Consumerization of Information Technology and the Characteristics of Consumer Technology Devices.

The effect of Consumerization of information technology and the Characteristics of Consumer Technology Devices was determined from the results of Table 4.6 below, the established multiple linear regression equation becomes:

$$Y = 10.045 + 3.427X_1 + 0.925X_2 + 1.012X_3 + 1.929X_4$$

Where : X_1 – Competence, X_2; Continuous Connectivity; X3 – Innovativeness; X_4 – Autonomy

The coefficient of the independent variables ($X_1 – X_4$) is significant at 5% significance level. The coefficient of evaluating the characteristics of consumer technology is highest as far as competence of the consumer device is.

Table 4.6: Relationship between CoIT and characteristic of consumer technology devices

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Co linearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
	(Constant)	10.045	5.654		1.373	0.174		
	X_1	3.427	1.498	0.007	0.067	0.947	0.902	.893
	X_2	0.925	0.283	0.071	0.690	0.492	0.934	1.071
	X_3	1.012	0.954	0.086	0.789	0.433	0.833	0.972
	X_4	1.929	1.013	0.093	2.861	0.392	0.854	1.171

The variance inflation factor (VIF**)** quantifies the severity of multi-co linearity in an ordinary least squares regression analysis. It provides an index that measures how much the variance of an estimated regression coefficient is increased because of co linearity. The variance inflation factor of the model variables is small which means that there is small co linearity between the independent variables and the SD of around 1.0 for the independent variables indicates that the standard error of the variables will decrease by a unit if one of the variables is excluded.

In addition a simple regression equation was run to establish the motivation of using devices and the consumerization of the same devices. The results are presented in table 4.7 below

Table 4.7: Summary Output Table

Regression Statistics

Multiple R	0.81602261
R Square	0.66589292
Adjusted R Square	0.63507222
Standard Error	0.60295872
Observations	119

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	17.258427	3.63444611	6.034176	0.019601	11.83917979	34.03337
X_1	0.3427631	0.03948603	5.54883	0.030977	0.388995917	0.04921

Intercept Coefficient: the b_0 which estimates β_o
X_1 Coefficient: the b_1 that estimates β_1, or the slope of the regression line

From the summary table, the simple linear regression between the motivation and consumerization of the COIT, the simple linear regression equation becomes

$Y = 17.258427 + 0.3427631X1$

From the results above, the coefficient and the constant values are still insignificant at 5% significance level. However the model is significant because P value (0.031) is less than 0.05 significance level. Therefore motivation has a significance effect on Consumerization of Information Technology.

4.7 Discussion

From Literature review, it is evident that CoIT has been accepted and well adopted in the developed countries. In Kenya organizations are allowing their employees to use consumer technology devices for office work (Serianu, 2014). CoIT is not only limited to generation Y but spread across all age groups, this would be explained by the fact that older age groups are in higher job groups with more disposable cash to purchase smart phones and tablets compared to generation Y who are in entry level jobs with less pay. Another explanation could also be employer facilitation to acquire consumer technology devices depending on job groups as is the case in most government organizations

Most employees in the road sub sector use Consumer technology for office use which can be explained by the fact that they spent a good amount of their time in the field hence the motivation for CoIT. Literature review indicates that employees choose to adopt CoIT because it enables them to work from anywhere anytime and also increases employees' productivity at work (Cisco, 2013).

Same as literature review, consumers have shifted activities from the traditional devices to smart phones and tablets with the main activities being performed on consumer technology devices being emails, spreadsheets and client relations on social media. This shift enables the knowledge workers the flexibility to work from home, in the field, on safari as well as in the office.

Motivation for CoIT remains high with work related issues and social status being the major motivators. This could be due to the perception that office technology is old and outdated museum technology and also the fact that use of consumer technology encourages mixing personal and office work giving the user a smooth transition without the need to switch from one device to another.

Consumer technology device usage at the work place is majorly influenced by competence of the users to use the devices and freedom of usage of their personal devices. Self Determination theory explains that competence, autonomy and psychological relatedness are optimal conditions in which tendencies are enacted. The study established that competence and autonomy are the dominant variables as far as adoption of CoIT is concerned.

The study has also established that motivation has a significance effect on adoption of CoIT. However; competence, continuous connectivity, innovativeness and autonomy as characteristics of CoIT devices have no significance effects on the adoption of CoIT. .

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of the key findings of the study as well as the conclusions, limitations of the study, and recommendations for further research.

5.2 Summary

The main intent of this research was to establish the motivation for consumerization of information technology (CoIT) on knowledge workers in the road sector in Kenya. The finding of this study is that several motivating factors have contributed towards consumerization of information technology trend by the knowledge works in the road sub-sector in Kenya. The findings were that majority of the employees in the road sub-sector are utilizing consumer technology devices for both office work and personal work blurring the line between work and home. The study further showed that these employees use multiple consumer devices ranging from smart phones, tablets and laptops to get both personal and official work done simultaneously.

The research has confirmed that consumerization of information technology can be described by one of four distinct factors that were investigated namely; the competence of the device, continuous connectivity ability, innovativeness and enhancement of employees autonomy. The common usage of the consumer technology devices by the employees were found to be on emails, word processing and spreadsheets. However, there was moderate usage of the consumer technology devices by the employees for functions such as video conferencing, geospatial data collection, data update and

validation. Thus the finding shows that the respondents majorly use the devices for common applications and social networking. The factors found to affect the motivation for consumer technology for office use were found to be work related factors, freedom of usage, affordability and social status. The highest factor loading was found to be the status to which the consumer devices are associated with at peer level and the increased social standing that ownership of such devices as laptops, smart phones, notebooks, and tablets represents. The dominant characteristic of the consumer behavior that affects consumerization of information technology is the competence level of the user to perform various tasks using their personal technology with least or no user support.

Freedom of usage as a motivating factor for CoIT was found to have the least factor which is consistent with continuous connectivity as a characteristic of Consumer technology being the least contributor to CoIT of the four characteristic used in this study. This could be explained by the fact that the two factors have internet connectivity as a contributor which is not wide spread in the country and also an expensive service.

5.3 Conclusion

Based on the results from the data analysis, the findings and discussions of the study, it is evident that: - CoIT is no longer a phenomenon but rather a trend which has been well adopted. Most employees use their personal technology for both personal and office work and will continue to do the same in future. CoIT usage cuts across all age groups with majority of the users age ranging between 26- 45 years. Emails, client relations, spread sheets and web based applications are the most used application for work based usage on personal technology devices. The core functions of the sector such as

navigation, road mapping, and geospatial data processing are used on personal technology but to a small extent.

On Motivation for CoIT, most employees cited social status and affordability as the main contributing factors to owning consumer technology devices. Other motivating factors cited included work related factors and freedom of usage with ease of doing work and mixing personal and work life, and discretion and autonomy respectively being the key motivating factors. Of the characteristics of consumer technology devices, competence and autonomy where demonstrated as the major contributing factors for the adoption of CoIT.

Therefore the increased usage of personal technology for office work could be attributed to psychological issues associated with the devices and little to do with technological issues. Most employees choose to adopt CoIT because of the personal benefits the devices bring in their lifes such as convenience, comfort and flexibility. The findings show that adoption of consumer technology for office work by employees has both beneficial effects to the employees and the realization of the organizations objectives. There is need of an organization to therefore support the use of consumer technology for IT process and help the employees to strike a balance between the use of the devices for social networking and performing office duties. It is apparent that differences in perceptions of the relative importance of consumer devices among the employees vary depending social and economic status.

Consumer technology devices depend on various interactive components, and committing to just one or few aspects is unlikely to produce the desired effects. Thus, the consumerization of IT is more of the consumer orientation and there is need to develop

devices that will meet the office work and the social needs of the employees. Companies should take a strategic approach to consumerization by engaging executives and business units in the development of CoIT policies; having a plan that clearly defines which technologies are supported, versus which are tolerated or even prohibited; and deploying enterprise-grade infrastructure to address security and compliance, centralized management, and cost control.

Should organizations step in to assist in purchasing these devices for their employees for uniformity and some level of control to accessing the organization resources? This is a question most organization adopting CoIT should consider..

5.4 Recommendation

The study has sought to improve understanding of the motivation for consumerization of information technology (CoIT) on knowledge workers in the road sector in Kenya. The possibility of prescribing effective adaption of consumer technology devices in an organization is therefore necessary. This requires the development of a framework, exploring the main components of consumer technology devices in more depth. This should provide scope for guiding organizations on the more appropriate strategies for the use of these devices to achieve realization of its objectives without compromising on the organizations quality and security of its information technology resources. In addition, a potential exists to improve the employee output and performance consequences in most settings to provide improved guidance to decision makers prior to exercising their choices. Thus, management of the process of information technology assessment and adoption is of critical importance to organizations today. Organizations need to benchmark against which they can compare the activities and performance of consumer

technology devices in order to achieve maximum benefit for the organization as well as to the satisfaction of the employees.

5.5 Limitation of the Study

The study is subject to some methodological limitations. First, it is suggested that the size and nature of the sample must be enhanced to ensure variability and control for possible extraneous variation. While the sample is restricted to only a single sector, it would be recommended that data should be gathered from various sectors and industries in Kenya to corroborate the research findings. In addition, since, the data in this research was collected from knowledge workers of the organizations on the basis of their subjective evaluations, objective performance indicators should also be employed in the analysis. Further, the study did not account for certain behavioral factors – related to employees' and managers' characteristics, attitudes, and experience levels – as well as organizational factors – such as structure, size, remuneration and business nature – that play a moderating role in the relationships highlighted in this study. The study was carried out in Nairobi where employees have access to good internet connectivity; the results would not cut across different parts of the country as internet is still a scarce resource in Kenya.

5.6 Suggestions for Further Research

CoIT is a relatively new trend in Kenya and in Africa but a well-established trend in developed countries. The researcher recommends an expansion of this research work to other employees in other sectors within Kenya and the African continent to establish the psychological issues contributing to Consumerization of Information Technology. Also a difference model could be developed as the one used in this study was adopted from studies carried out in developed countries.

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