

**THE IMPACT OF INFORMATION COMMUNICATION TECHNOLOGY
(ICT) ON PERFORMANCE OF TANZANIA POSTS CORPORATION (TPC)**

By

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**A Dissertation Submitted in Partial Fulfillment of the requirements for the
Award of the Degree of Masters in Development Policy (MSDP) of the Mzumbe
University**

2013

CERTIFICATION

We, the under signed, certify that we have read and hereby recommend for acceptance by the Mzumbe University a dissertation entitled: “**The impact of Information Communication Technology on performance of Tanzania Posts Corporation**”, in partial fulfillment of the requirements for the award of the degree of Master of Science in Development Policy of the Mzumbe University.

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DEDICATION

I would like to dedicate this work to Almighty GOD, for his love is great and he has never put me into shame for he has said in Jeremiah 29:11, *“for I know the plans I have in you, declares the LORD, plans to prosper you and not to harm you, plans to give you hope and a future”*.

LISTS OF ABBREVIATIONS

CHC	Consolidated Holdings Corporation
DoI	Diffusion of Innovation theory
EACSO	East African Common Services Organization
EMS	Expedited Mail Services
EMS	Expedited Massaging Services
ICT	Information Communication Technology
IT	Information Technology
IToEICT	India-Tanzania Center for Excellence in Information and Communication
ITU	International Telecommunication Union
MSDP	Masters in Development Policy
MUCHS	Muhimbili University College of Health Sciences
PC	Personal Computer
PDA	Personal Digital Assistant
PPO	Public Postal Operator
PRSC	Parastal Sector Reform Commission
PSRC	Parastal Sector Reform Commission
RBT	Resource Based Theory
RoA	Return on Assets
SA	System Administrator
SPSS	Statistical Package for Social Science
TCC	Tanzanian Communications Commission
TCRA	Tanzania Communication Regulatory Authority
TP & TC	Tanzanian Posts and Telecommunications Company
TPC	Tanzania Posts Corporation
UCAF	Universal Communications Access Fund
URLs	Uniform Resource Locators
URT	United Republic of Tanzania
US	United States

VSAT	Very Small Aperture Terminal
WWW	World Wide Web

ABSTRACT

This study aimed at exploring the impact of Information Communication Technology (ICT) on performance of Tanzania Posts Corporation (TPC). The study focused on examining ICT technologies available at TPC; assessing efforts used to improve product innovation in TPC; assessing performance trends before and after adoption of ICT in TPC and exploring customer responsiveness towards TPC services in the era of ICT. The study adopted a case study research design to attain its objectives. The sample size for the study was 62 respondents. Purposive sampling technique was used whereby questionnaire, interviews, observation and documentary review were used to collect data. The Statistical Package for Social Sciences (SPSS) and Excel software were used in analysis, while data from in depth interviews were analyzed qualitatively. In this study, it was found that ICT technologies available at TPC include: computers, telephone and internet. Also, findings revealed that there was a statistically insignificant increase in performance before adoption of ICT and after adoption of ICT, whereby profitability of items posted in mails and logistic business, financial and agency business and courier business was assessed, also Return on Asset and Marginal ratio were used as indicators. The eta squared statistic was applied and the results indicated very small effect size. In addition to that, the study revealed that customers still needed TPC services in the era of ICT in spite of development of other forms of communication like emails, mobile phones and internet. This study recommends increasing the government support to TPC by improving physical infrastructure and providing vehicles for transporting mail and parcel so that it can fulfill the major obligations of universal postal services to the customers so as to ensure efficiency in TPC operations. In order for TPC to enjoy the fruits of ICT on its performance, it must speed up the way of adopting ICT so as to ensure significant increase in performance. Finally, it is recommended that TPC must raise its trustworthiness, improve customer care, strengthen their network, improve their services and cope with market competition.

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CHAPTER ONE

1.1 Background to the research problem

1.1.1 Global Discussion on ICT and organizational performance

A number of studies have been conducted on the impact of ICT performance in organizations. Studies like those of Chowdhury (2006) who found that investments in ICT have a positive impact on general market expansion. However, it may have a negative impact on labor productivity and such investment may not have any significant impact on firms return nor does it determine the firm's exporter (non-exporter) status. Another study by Kobelsky, Larosiliere and Plummer (2013) on the impact of information technology on performance in the not for profit sector found that the impact of a change on how IT is used is significant and varies by time horizon. Furthermore, Kohli and Devaraj (2003) conducted a study on performance impacts of information technology to determine actual usage and the missing link. The study found that technology usage was positively and significantly associated with measures of hospital revenue and quality and this effect occurred after time lags. Similarly, Sinkovics and Kim (2012) conducted a study on information technology and organizational performance within international business relationships. The study concentrated on a review and integrated conceptual framework. The study found that IT capabilities contribute directly to improving organizational process such as coordination, transaction specific investment, absorptive capacity and monitoring.

1.1.2 ICT adoption in the workplace

Many organizations and businesses have adopted the use of ICT in their operations, especially with networked computers and internet access. For example, different fields use ICT these include: insurance companies, universities, schools, banks, hospitals, hotels, and transportation companies (Dix 2007; Mathew 2011; Oladapo 2010; Yousaf 2011). With the presence of internet and computer in an organization, it has helped in simplifying work and increasing productivity. Although investing in

ICT costs a lot of money and in a short term a firm can incur loss, but in a long run a firm will start to enjoy economies of scale.

1.2 Statement of the problem

There is a claim that performance of Tanzania Posts Corporation (TPC) is declining as evidenced with fall of mail volume, parcel posts, stamp vendors, electronic money transfer, EMS (Expedited Mail Services) courier, fax messages (TPC Annual Report, 2010). According to Report of the Postmaster General (2010) the performance of domestic registered mail items recorded a decrease by 13% from 513,046 in 2009 to 445,748 in 2010 (Post News, 2011). Likewise, international bound registered and insured items dropped by 50% from 66,503 in 2009 to 33,545 in 2010 (TPC Annual Report, 2010). There are people who associate the decline of the corporation with advancement reached in Information Communication Technology (ICT).

Elsewhere several authors have linked changes in performance of post corporations with development reached in ICT too. For example, Asher, Callan and Marsh (2010) state that the impact of the electronic shift is directly felt by postal services around the world with significant declines in mail volumes, and that the postal service is no exception. This is supported by observation made by Accenture Research and Insights (2012) of 3.4% decline of mail volume in North America., Europe (4.2%) and Asia Pacific (3.1%), though the rate of decline is comparatively less steep than in 2008 up to 2009 where decline was 12.6%, 5.3% and 3.8 %, respectively. The impact of ICT is also associated with decline in address inland letter volumes in United Kingdoms (UK) in 2008 (4%), 2009 (6 %), 2010 (7 %), 2011 (5 %) and 2012 (6 %) as a result of e-substitution which is driving the structural decline in the traditional letters market (Annual Report of Royal Mail Group, 2012).

Given the above background, there is a need to determine whether the decline in performance of the Tanzania Posts Corporation is associated with the development reached in ICT. Thus, this study intended to examine the impact of Information Communication Technology (ICT) on performance of Tanzania Post Corporation.

1.2.1 Gap in previous studies

Basing on ICT impacts on organization performance studies, the researcher draws an interest of reviewing other studies concerning postal industry conducted in other parts of the world including Tanzania; in order to be in a position to reveal a gap of knowledge which has not been covered. For example, Accenture Research and Insights (2012), conducted a research on achieving high performance in the postal industry. Findings from the study concluded that diversification is an essential element of any successful postal operator's strategy. Another study conducted by Asher, Callan and Marsh (2010) focused on studying the postal service role in the digital age expanding the postal platform. The study found that the digital revolution has become the "disruptive innovation" to the traditional business of U.S. Postal Service, with several different communications channels competing for consumers, the postal service needs to modernize its role to accommodate for the digital age. For the case of Tanzania, one of the studies conducted by The World Bank (2003), was entitled *Evaluation of Postal Sector Reform: Tanzania*. The study was based on assessing how policy reforms contributed to the performance of Tanzania Post Corporation. Another study on Tanzania was conducted by Kavura (2011). The study assessed the market demand of postal services. However, there has been no study to explore the impact of Information Communication Technology (ICT) on performance of Tanzania Posts Corporation (TPC). This study intended to contribute in filling the gap.

1.3 Objective of the study

To explore the impact of Information Communication Technology (ICT) on performance of Tanzania Posts Corporation (TPC)

1.4 Specific objectives

- i) To examine the ICT technologies available at TPC
- ii) To assess efforts used to improve product innovation in TPC
- iii) To assess performance trends before and after adoption of ICT in TPC
- iv) To explore customer responsiveness towards TPC services in the era of ICT

1.5 Research questions

- i) What ICT technologies are available at TPC?
- ii) What are the efforts being made to improve product innovation in TPC?
- iii) What is the performance trend before and after adoption of ICT in TPC?
- iv) How do customers respond to TPC services in the era of ICT?

1.6 Scope of the study

The study was conducted in Dodoma Urban District, Mbeya Urban District and Ilala Municipality in Dar es Salaam. Both primary and secondary data were collected in the study areas. The study was based on exploring the impact of Information Communication Technology (ICT) on performance of Tanzania Posts Corporation.

1.7 Significance of the study

This study is useful to the government, academicians and development practitioners like policy makers. Firstly, the study adds knowledge in understanding TPC service operations in the era of ICT. Also the study helps decision makers and other stakeholders in efforts to improve the uses of ICT in development activities. The study informs various stakeholders on how to respond to the challenges brought by ICT development and take advantage of it. Furthermore, the results can enable the

government to have a good understanding of TPC performance and how it struggles to respond to challenges brought by ICT. In addition, this study provides useful reference material for researchers who are interested in pursuing further research on impact of ICT on TPC performance. Lastly this report is part of fulfilling requirement for the award of Masters Degree in Development Policy.

CHAPTER TWO

LITERATURE REVIEW

2.1 Theoretical Review

2.1.1 Resource Based Theory

Resource based theory (RBT) has been used by different scholars whose attention is in studying ICT impacts and organization performance. As Musabila (2012) noted, RBT was pioneered by Penrose (1959) and it has in recent years gained popularity in ICT research studies. Different scholars, for example, Chowdhury (2006); Kobelsky et al, (2013); Bharadwaj, Bharedwaj and Konsynski (1999) argue that the unique resources are the main sources of competitive advantage and organization performance. Researchers have identified various ICT resources, such IT capabilities, IT infrastructures and IT human resources (see, Bharadwaj, 2000). While according to Wu, Yeniyurt, Kim and Cavusgil (2005) assert that IT-enabled supply chain capabilities, which are firm-specific and hard-to-copy across organizations. These capabilities can serve as a catalyst in transforming IT-related resources into higher value for a firm. Gu and Jung (2013) defined resources as stocks of available factors that are owned or controlled by the firm. Based on previous studies; ICT resources in this study are defined as a multidimensional term which integrates software and hardware which enhance telecommunication functions. These infrastructure (application, data, server and network), ICT personnel (people who posed technical know how), ICT capital (cost of implementing and running ICT in an organization).

2.1.2 The Theory of Diffusion and Innovation

ICT impact and organization performance, may not meet the resource based theory criteria when considered alone because the impact of ICT in organization performance can be determined on capital invested in adopting ICT and type of technology adopted (Kohli and Devaraj, 2013); (Msabila, 2012) (Tan, Razali and

Desa, 2012). Hence, this study draws an interest on diffusion of innovation theory so as to understand the process of innovation. Diffusion of Innovation (DoI) is a theory explaining why and to what extent a new idea or technology reaches individuals or organizations in a social system.

A number of thinkers have contributed in explain the DoI theory including Rogers. Rogers (2003) defined diffusion as a process by which an innovation is communicated through certain channels over time among the members of social system. For instance, the internet provides instant communicative access world wide through electronic compared to the physical mail which needs to be physically transported by a vehicle or airplane or a person.

Since innovation is not a one day process, it is a change overtime, the diffusion of innovation theory categorize different types of adopter which including innovators (risk takers), early adopters (hedgers), early majority (waiters), late majority (skeptics) and late adopters (slow pokes) (Rogers, 2003). Regarding to the study with the development of ICT in Tanzania both TPC and customers of TPC services have depicted different characteristics of adopters by looking on the performance of TPC with relevance to a number of consumers who adopt other means of communication such as internet, cellular phones and other electronic based messaging system.

For example, during the year 2009 TPC domestic market was 16.6 million compared to 16.7 million items in 2008 which is equivalent to a decrease of 0.6 percent. With the shift of early adopter from TPC services to substitute products such as e-mail, cellular phones and tablet computers such iPads, there is an increase of mobile phone subscribers and internet users. For example according to Information Science Technology (IST) - Africa consortium 2010- 2012, reported that Tanzania's mobile phone subscribers rose 22 percent to 25.6 million by 2011. According to Tanzania Communication Regulatory Authority (TCRA) Report (URT, 2010) - Report on Internet and Data services in Tanzania, a number of internet users is growing with a rate of 24 percent per annum. In 2008 there were 3.5 millions internet users, with an

increase up to 4.8 million users in April 2010. As Mbarawa, noted in 2011 the number of internet users rose to 6 Million by May 2012 from 5.3 Million at the end of 2011 (URT-TCRA, 2012). This situation is corresponding with (Roggers, 2003), early adopters tend to shift from sophisticated technology to most sophisticated one which is faster and meet their current and emerging demand.

Apart from that, in Figure 2.1, Rogers (2003), delineate the process of innovation adoption in sequence, there are five main time dependant steps in the innovation decision process that the adopter must pass through. These steps are as follows:

- i) **Knowledge:** it occurs when an individual is exposed to the innovation's existence and gains some understanding of how it works
- ii) **Persuasion:** it occurs when an individual forms a favorable or unfavorable attitude toward the innovation
- iii) **Decision:** it occurs when an individual engages in activities that lead to a choice to adopt or reject the innovation
- iv) **Implementation:** it occurs when an individual puts an innovation into use
- v) **Confirmation:** it occurs when an individual seeks reinforcement of an innovation decision or reverse the previous decision due to the conflict

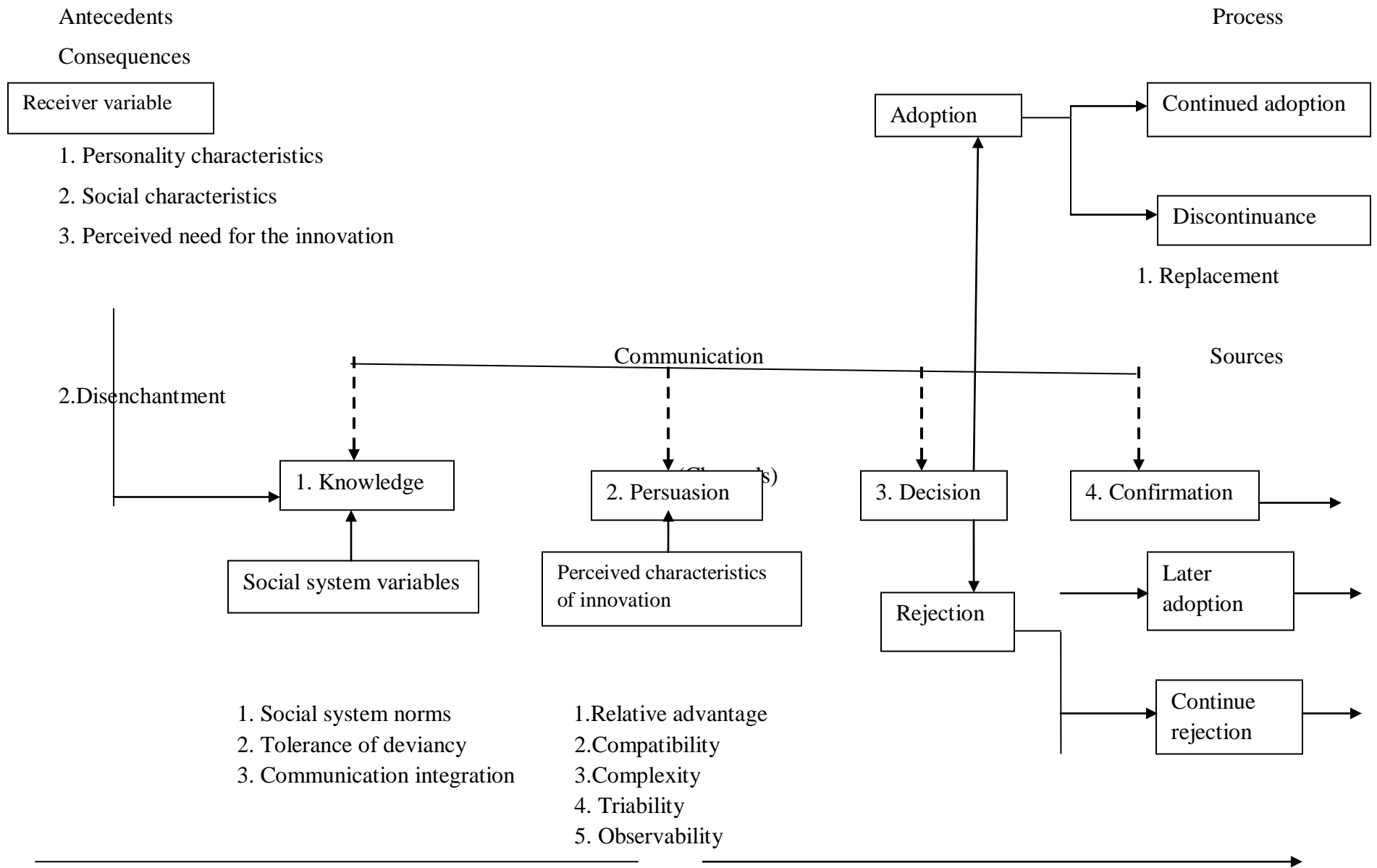


Figure 2. 1: Source: Diffusion of Innovation Model (Rogers, 2003).

Adaptability of innovation of technology start first with awareness about the innovation, for example “*there has been a wrong notion that the use of ICT is only for the elites*” said Ntabazi, Manager of Investigations- Posts Uganda as it reported by Post News (2008, p. 5). With this notion one is limited in adopting a certain technology, since he/she is not exposed to the innovation and gain some understanding of how it functions. Therefore step three of making decision whether to try the innovation can only be done after one is made aware of the importance of the innovation in his/her activities.

Rogers (2003) suggests that the rate at which certain innovations diffuses through the system depends on several innovation attributes. These attributes include: relative advantage, compatibility, complexity, trialability and observability, as they are shown in Figure 2.1. The innovation attributes are detailed as follows:

- i) **Relative advantage:** is defined as the degree to which an innovation is Perceived as being better than the idea it supersedes
- ii) **Compatibility:** is the degree to which an innovation is perceived as consistent with the existing values, past experiences, and needs of potential adopters
- iii) **Complexity:** is the degree to which an innovation is perceived as relatively difficult to understand and use
- iv) **Trialability:** is the degree to which an innovation may be experimented with on a limited basis
- v) **Observability:** is the degree to which the results of an innovation are visible to others

According to Rogers and Shoemaker, 1971 (as cited by Bandara 2001) people adopt what they value but resist innovations that violate their social and moral standards or that conflict with their self conception. The more compatible an innovation is with prevailing social norms and value systems, the greater its adoptability. For instances; in 1990s postal industry worldwide were undergoing fundamental reforms in order to

cope with the new emerging needs of customer. Hence TPC has to adopt a technology which meet the needs of customers and survive in the competitive market. TPC have tried to modernize its services by implementing the use of data communication network which allowed the corporation's transmission and exchange of data as well as management information systems.

2.1.3 Models of ICT adoption in organization

There number of scholars who had been interested in studying factors which affect organization adoption of ICT including (Spanos, Prastacos & Poulymenakou., 2002; Mehrtens, Cragg and Mills 2001; Rogers 1983 as cited in Mennati (2010), organizations views investments in information technology (IT) as a way to combat competition by improving productivity, profitability, and quality of operations.

However, there are many factors which can influence organization to adopt innovations and technology. According to E-business watch report (2008), proposes ICT's 3- phase value chain (Figure 2.2). In the first phase, the companies adopt ICT due to external pressures, supplier/buyer relations and to compete with their competitor. In the second phase, by incurring organizational changes, exchanging information and increasing personnel skills, the companies will innovate, the results of which will be higher turnover, and increased market share and productivity.

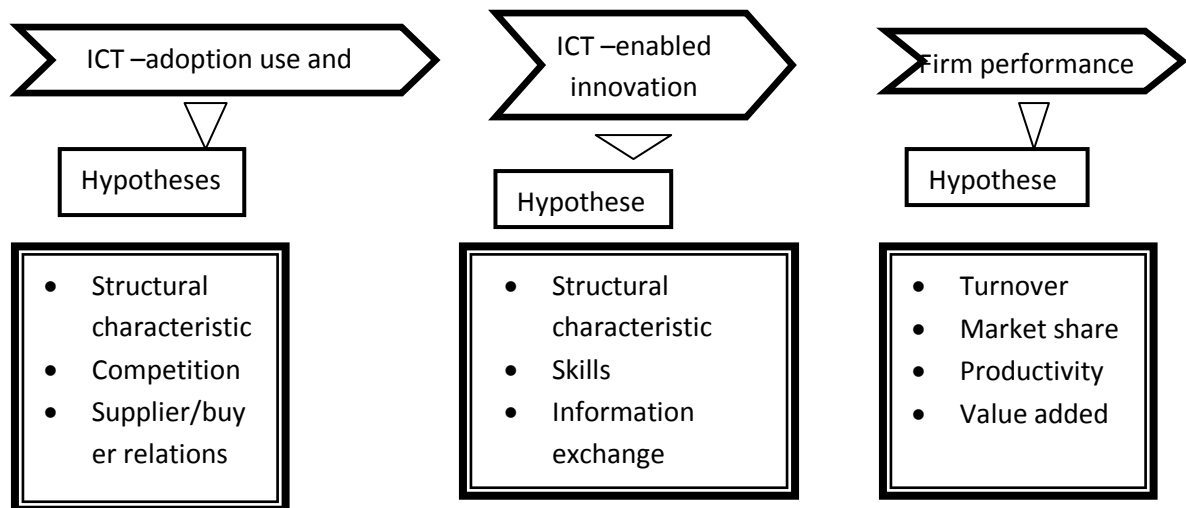


Figure 2.2: ICT Value Chain (E-business Watch Report, 2008).

2.1.4 Impact of ICT on organization performance

There has been a growing concern with people in the society on how development of ICT affects each angle of life. For example, if you look at Millennium Development Goals which has 8 goals, in order to achieve each goal ICT played a major role (Yonah, 2005; World Telecommunication Development Report 2003 & Dgidonu 2010). In spite of that, regarding to development of ICT many scholars has been drawing interest on how ICT contributes to the performance of organizations (Jung 2013; Cohen & Olsen 2013; Wu, Yeniyurt, Kim & Cavusgil 2005 & Mennati 2010). The ICT and the digital revolution are basically changing the worlds of communications and commerce.

In order for any organization to survive in the market it needs to produce profit. There a lot of factors which contributed to organization performance including: the market structure in which a firm operates; the market share, size, human resources, managerial and organizational structure of the firm (Mennati, 2010). Different scholars are arguing whether the impact of ICT adoption in an organization on performance is positive, neutral or negative. This is because the impacts were not the

same in different organizations (Mathew 2011; Ajao 2012; Dix 2007 & Mennati 2010). Apart from that, whether the impact of ICT application is big or small, the final result will depend upon the environment in which ICTs are applied and the attitudes of the authorities who implement them (Mennati, 2010).

Furthermore, as discussed in Section 1.2.1 in Chapter One, the impact of ICT adoption on organization performance is subjected to debate because the impacts were not the same in different firms. Therefore; as Koelling 2008 model of relation between technology innovation and firm performance as cited by Mennati (2010) in Figure 2.3 which discern that both internal and external factors cause a firm to adopt technology. Internal factors include firm specific resources and appropriate tactic while external factors include market reaction. Although there has been a debate on the impact of ICT on organization performance; several studies show that if an organization takes a calculated risk before investing in ICT, there will always be a positive return after a period of time. As it cited by (Kobelsky, et al., 2013), Investments in ICT-capital can lead to a substitution of ICT equipment for other forms of capital and labour and may generate substantial returns for firms that invest in ICTs.

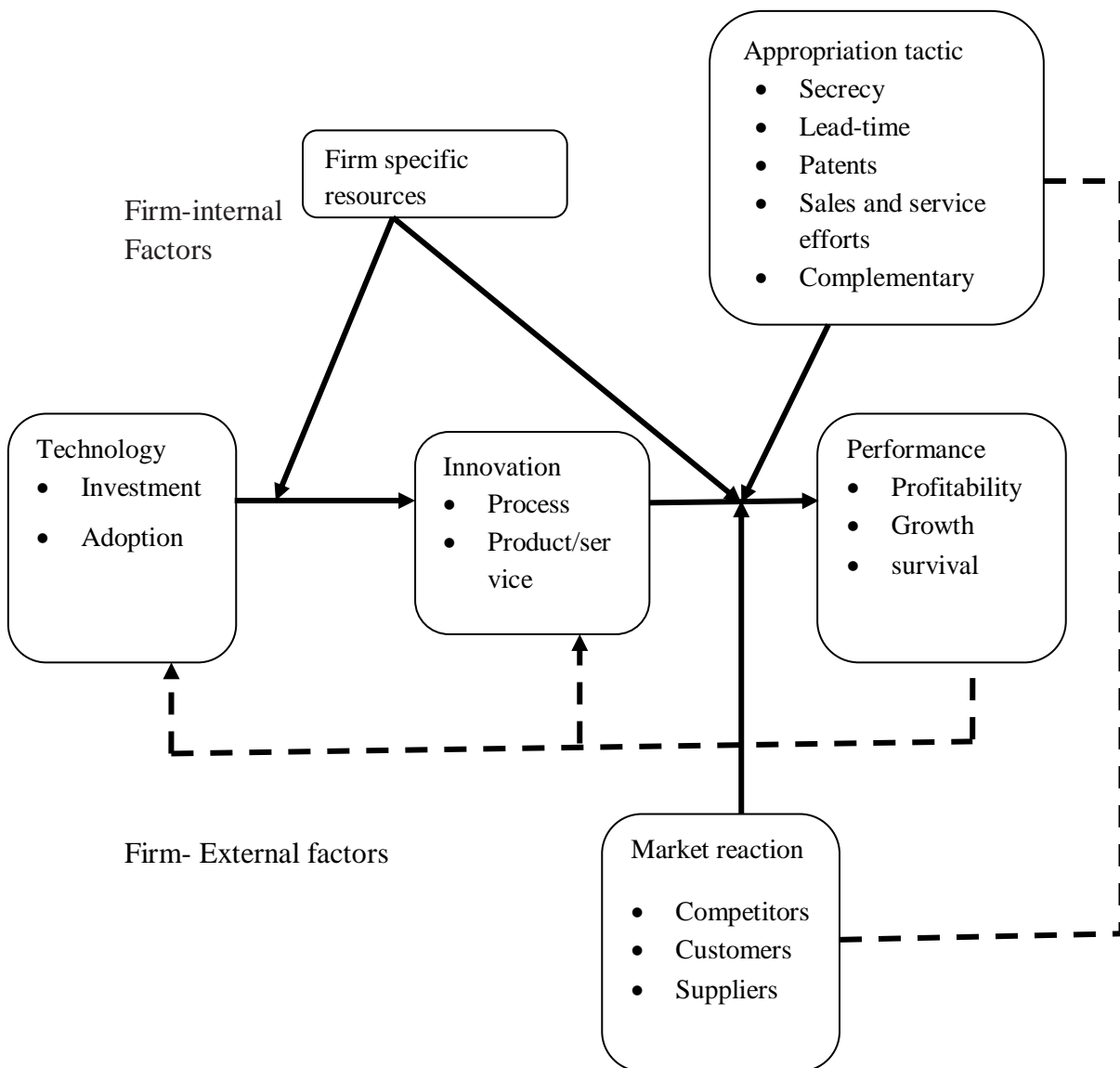


Figure 2.3: Relation between technology innovation and firm performance (Koellinger, 2008 as cited in Mennati ,2010).

2.2. Empirical literature review

2.2.1 The concept of ICT

Information and communications technologies (ICTs) cut across a variety of technologies including: computer, microelectronics and related technologies including microchip and microprocessor-based technologies; multimedia and other information processing technologies and systems; telecommunications technologies

and infrastructure (fixed line, wireless, satellite based and mobile infrastructure); and communication network technologies and infrastructure (including local and wide area communications and computer networks for voice, data and video) (Dzidonu, 2010).

Other technologies that forms part of ICTs include: broadcasting networks and technologies including radio and TV networks; production-based technologies including those used in computer-integrated manufacturing and production systems and operations, robotics technologies, biotechnology-related equipments and systems; and the Internet as a globally-based delivery platform incorporating elements of computers, telecommunications, communications technologies and networks and other multimedia development and delivery technologies to form an integrated multimedia transmission and communication delivery infrastructure and platform with a global reach (Dzidomu, 2010).

According to Unwin (2009) in Figure 2.4, ICT is a broad term that covers a wide range of technologies; these technologies are associated with three main sets of interconnected processes: capturing of information, its storage, and ways in which people access and share it. Underlying all these, there has to be a physical infrastructure in place that enables them to operate and be connected, and a regulatory mechanism to ensure that there are common standards in place for communication to be possible between devices.

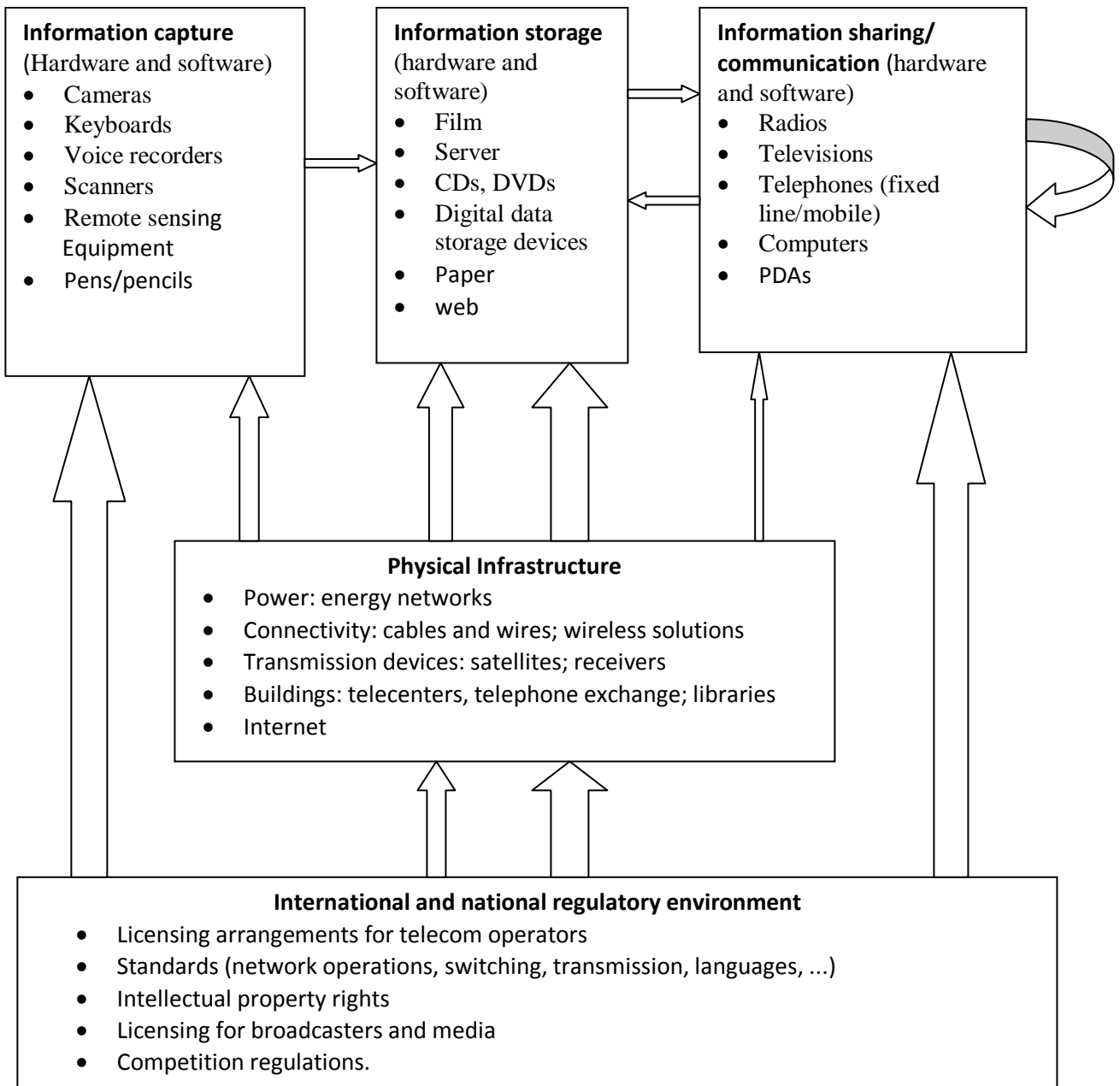


Figure 2.4: Framework for conceptualizing information and communication technologies (Unwin, 2009).

2.2.2 ICT infrastructure

In order to run ICT facilities there must be evolution of physical infrastructures like electricity supply, wires, hardwires. ICT infrastructure is also evolving, embracing the availability of equipment, supplies and services of computers, telecommunications, multimedia information providers, broadcasting (radio and television), and content (Unwin, 2009). In the process of disseminating infrastructure, there are some things that need to be considered such as choice of technology which goes hand in hand with the needs of people, policy of the country and physical environment.

2.2.2.1 Information sharing/ communication hard-wares and soft-wares

2.2.2.1.1 Computer usage

Information sharing/ communication hardware and software's involves; radios, televisions, telephones (fixed line/mobile), computers and PDAs. According to Goodwill Foundation Society (1998-2013), a computer is an electronic device that manipulates information, or "data." It has the ability to store, retrieve, and process data. Furthermore, it was reported by Studymode (2012), Computer has become very important nowadays because it is very much accurate, fast and can accomplish many tasks easily. Otherwise to complete those tasks manually much more time is required. It can do very big calculations in just a fraction of a second. Moreover it can store huge amount of data in it. We also get information on different aspects using internet on our computer.

2.2.2.1.2 The use of telephone

In Africa, particularly in Tanzania, one of the notable developments of ICT is, increases in telephone users. According to Telegeograph (2013) reported that, Tanzania's fixed and mobile phone subscribers were 21.158 million, 25.827 million and 26.9788 million, in 2010, 2011 and 2012, respectively. According to Unwin (2009), the subsequent dramatic rise in the use of mobile phones was enabled by the construction of numerous base stations to increase cell density and thus permit users seamlessly to

access networks wherever they wanted to. The increase of telephone users has a negative impact on traditional letters, as it was reported by Makuburi the Director of Postal Affairs in Tanzania Communications Regulatory Authority; technological changes in ICTs have had a substitution effect on private letter mail (Makuburi, 2011).

2.2.2.1.3 The use of internet and the World Wide Web

The internet is essentially a connection of interconnected computers, or networks (Abbate, 1999 as cited in Unwin 2009). For internet to function, computer systems, known as servers, need to run permanently, so as to provide the required services to other computers within a given network that wish to access them. These servers include mail servers that handle e-mails, application servers that run applications, and file servers that store files and database. The importance of internet is that, you can search for any information you need quickly and easily, you can access internet every where you want if you have connection. You can access by use of computer laptop, ipad and mobile phone, you don't need to have a passport or visa to obtain certain information.

Basing on empirical literature, internet cafe is a major source of income to TPC, whereby in 2009, 2010 and 2011; there was 23, 26 and 34 number of internet café respectively, which mark revenue of 219,521,510 Tshs; 187,204,569 Tshs and 262,234,964 Tshs, respectively. The objective is to computerize most of TPC operations and roll out more internet cafes whereby the post office as a multipurpose communication center will enable more citizens to benefit from the new technology (TPC Annual Reports of 2007; 2008; 2009; 2010 and 2011).

World Wide Web is the body of resources accessed by hyperlinks, commonly called Uniform Resource Locators (URLs) that are accessed over the internet. The modern web provides the world's greatest source of information storage, combining the memory contained in all of the computers of internet (Unwin, 2009).

2.2.3 ICT human resources

Any kind of development in a specified field needs people who are skilled and experts. In order to have this there must be cost incurred in order to facilitate the progress of ICT development; things like training, short courses, and building of universities or establishment of certain department or center which will be responsible for providing ICT education so that, it can provide people who are experts in ICT use. As it was reported by (Barney 1991; Grant 1995; cited in Bharadwaj, 2000), Organizational human resources generally comprise the training, experience, relationships, and insights of its employees.

Therefore, in the field of ICT, a person who is responsible for ICT facilities is called a system administrator. The System Administrator (SA) is responsible for effective provisioning, installation/configuration, operation, and maintenance of systems hardware and software and related infrastructure. This individual ensures that system hardware, operating systems, software systems, and related procedures adhere to organizational values, enabling staff, volunteers, and Partners (supporting advancements, 2013).

2.2.4 Investment in ICT

Investment in ICT facilities including software and hardware has been given consideration to many organizations regarding to their operations. Initial implementation of ICT facilities may involve a lot of money and an organization can incur loss, but in a long run an organization may get a lot of profit. However the cost of investing ICT may include buying new products, repairing and running cost (Jean, Sinkovics and Kim, 2012). The impact of ICT investment on performance has become a matter of both academics and practitioners like Whangu and Jung (2013). As it reported by Mennati (2010) Investments in ICT include but not limited to: managers' time and support, investment in skills and organizational change, planning and implementation; redesign of products and production systems; new management and quality-control systems; formation of work groups, new organizational

hierarchies, implementation of incentive schemes and training staff and managers with general and specialized IT/ICT expertise.

2.2.5 Profitability measures in relation to ICT

Profitability ratio show a company's overall efficiency and performance. Profitability ratios are divided into two namely; margins and returns. Ratios that show margins represent the firm's ability to translate sales dollars into profits at various stages of measurement. Ratios that show returns represent the firm's ability to measure the overall efficiency of the firm in generating returns for its shareholders (Peavler, 2013). According to Boundless (2013), ratio is a number representing a comparison between two things; while return is a gain or loss from an investment.

Return on Asset (RoA) is net income divided by total assets. The RoA is the product of two common ratios - profit margin and asset turnover. Return on Assets is a measure of a company's profitability, calculated by dividing the net income for an accounting period by the average of the total assets the business held during that same period. A higher RoA is better, but there is no metric for a good or bad RoA, an ROA depends on the company, the industry and the economic environment. RoA is based on the book value of assets, which can be starkly different from the market value of assets. Asset is defined as economic resources that represent value of ownership that can be converted into cash (although cash itself is also considered an asset) (Boundless, 2013). The Return on Assets ratio is an important profitability ratio because it measures the efficiency with which the company is managing its investment in assets and using them to generate profit. It measures the amount of profit earned relative to the firm's level of investment in total assets. The return on assets ratio is related to the asset management category of financial ratios (Peavler, 2013). Measuring the impact of IT on business will guide investment as well as the choices organizations make on IT projects (Demopoulos, 2008).

2.6.5 Customer responsiveness towards TPC services in the era of ICT

Customer responsiveness is the operational performance that measure capability of the service providers in terms of time, quality and flexibility in relation to their customer (Nordin, Hasnan and Osman; 2012). International Telecommunication Union (2010), which reported that; Postal enterprises which are managed in the traditional government mould have generally been late adopters of ICTs. Since in any business environment, change of business in adopting technology can be influenced by customer needs and who they perceive the services provided. As Nordin et al., (2012) reported that customer responsiveness is influenced by the service innovation at the postal and courier services. Hence in spite of development of other means of communication which are brought by the development of ICT, people still communicate by the use of letters. Post News (2011) reported that, the decline in mail does not mean that people are communicating less today than before. As , the Posts Master General of TPC, Mndeme said “*a person in Tanzania sends and receives almost no letter per year while one in Asian countries sends and receives not fewer than 12 letters in the year*” (Post News, 2011, p. 6).

2.2.6 The concept of age, gender, education, and ICT

2.2.6.1 Age

According to Oxford dictionary (2009), age is the length of time that a person or thing has existed. Adoption of technology to the individual level may be caused by many factors, which include age of the person which has the contribution towards adoption and use of technology in an organization. As it observed by ITU (International Telecommunication Union, 2011), which reported that; younger people tend to be more online than older people, in both developed and developing countries. In developing countries, 30% of those under the age of 25 use the Internet, compared to 23% of those 25 years and older. At the same time, 70% of the under 25-yearolds a total of 1.9 billion are not online yet. This is in line with the findings of Unwin (2009); the introduction of text messaging on mobile phones has led to the emergence

of entirely new modes of behavior, especially among young people, who have developed many new and culturally distinct forms of communication.

2.2.6.2 Gender

Gender refers to the system of roles and relationships between men and women which are not determined by biology but rather by social, political, economic and cultural contexts (IPU, 2003). Gender is a development issue; hence the issue of gender can influence adoption of technology of an individual in society. As it observed by Venkatesh and Morris (2000) that men's decisions to use technology are more strongly influenced by their perception of usefulness while women's decisions are based more on perceptions of the technology's ease of use. Furthermore, men and women may view the same mode of communication differently.

2.2.6.3 Education

Education level has been a concern in the issues of technology use. As it observed by Hafkin and Taggat (2001) literacy and education is one of factors which affect ICT adoption and use.

2.2.7 The concept of automation

According to Automation Federation (1995-2013) defines automation as the creation and application of technology to monitor and control the production and delivery of products and services. Social implication involves Job losses, need to retrain for other jobs, work 24 hours and 7 days, and improve working conditions. Whereas technical implication includes; program machine to move slowly, cover moving parts, and cover the battery and processor, safety guideline in place while economic implication involves; high running costs, higher initial cost, cheap in the long term, repair costs, expensive to replace and redundancy costs.

2.2.8 Historical perspective on connectivity in Tanzania

Connectivity generally refers to the physical medium of linking you to the global Internet (Sheriff, 2007). Adequate connectivity is important for allowing the majority of Tanzanians to access ICT services. Hence improved ICT and other supporting infrastructures such as the availability of electricity, and means of transport such as roads are fundamental in the process of enabling access to ICT.

Internet use first started in Tanzania with a 'store-and forwarding' system for e-mail. This initiative began approximately in 1989 between the Muhimbili University College of Health Sciences (MUCHS) and FidoNet. Users dialed into the MUCHS servers and sent and received their e-mails. These e-mails would reside on the MUCHS server until a Low Earth Orbiting satellite was overhead. At that point, it picked up all e-mails waiting to be delivered and dropped e-mails destined for anyone connected to MUCHS. The same satellite eventually passed over the United Kingdom where it dumped all the e-mails it had collected from various locations. In the United Kingdom, the e-mails were received by GreenNet and subsequently channeled to their respective destinations through the Internet (Sheriff, 2007).

In 1995, a company called Star Telecoms Ltd. attempted to build a 'Tanzanian Internet' which was a network of many users and servers within Tanzania but without a link to the global Internet. The first 'live' Internet experience was pioneered by a company called CyberTwiga in 1996. Their connection to the Internet was via the SITA network which was used predominantly for 'live' flight-booking systems around the world. At that time, SITA and the telecoms incumbent were the only licensed providers of international data connections. As regulations eased, more data providers were licensed; namely Afsat and Datel. After this, many more ISPs connected to the global Internet, The cost of connectivity was extremely high with a mere 32kbps link costing an ISP about US\$16,000 (1 MB = 1,024kbps) in 1999 (Sheriff, 2007).

In Tanzania, since 1995 there has been slow development of internet and telephone subscribers as shown in Table 2.1 from 2006 onwards, there has been a rapid development of internet and mobile connectivity in Tanzania which is influenced by the development of electricity supply. According to URT-TCRA (2007, 2010 and 2012), by 31st December 2007, there were about 8.5 Millions voice telephone subscribers. This was an increase of about 47% from 2006. In 2008 there were 3.5 Million internet users, with an increase of up to 4.8 Million users in April 2010. By 2012 the number of internet users rose to 6 Million from 5.3 Million at the end of 2011. Therefore, it has been reported by TPC Annual Reports (2003,2004,2005,2006,2007,2008, 2009, 2010 and 2011), the development of advanced technology especially tele-communication networks has been a challenge to TPC, and due to the increase of number of telephone and internet subscribers, it has lead to adoption of new technologies in TPC especially with counter automation.

Table 2.1: Telephone subscribers as at 31st December 2007

YEAR	FIXED LINES	MOBILE	TOTAL
1995	88,000	2,198	90,198
1996	101,000	3,200	104,200
1997	114,600	20,045	134,645
1998	121,769	36,143	157,912
1999	150,220	50,100	200,320
2000	173,591	110,518	284,109
2001	177,802	275,557	453,359
2002	161,590	606,859	768,449
2003	147,006	1,298,000	1,445,006
2004	148,360	1,942,000	2,090,360
2005	154,420	2,963,737	3,118,157
2006	157,287	5,609,279	5,766,566
2007	236,493	8,252,281	8,488,774
2008	123809	130006793	13130602
2009	137433	16229706	16367139
2010	174511	20983953	23158464
2011	161063	25666455	25827518
2012	176367	27219283	27395650
March 2013	169786	27428903	27598689

Source: URT-TCRA (1995-2013)

2.2.9 ICT National Policy

Policy is a guideline towards action. In implementing ICT activities in the country, there must be a policy which shows the direction on how to implement ICT activities, failure to have this it may result in underutilization of resources as reported by URT (2003). The lack of an overall policy and poor harmonization of initiatives, have led to random adoption of different systems and standards, unnecessary duplication of effort, and waste of scarce resources, especially through the loss of potential synergies. The ICT policy of Tanzania 2003, it is a reflection of national goals, objectives and aspirations expressed in Vision 2025 which has five main attributes: high quality livelihood; peace, stability and unity; good governance; a well educated and learning society; and a strong and competitive economy capable of producing sustainable growth and shared benefits. In similar manner, this policy has ten main focus areas which include strategic ICT leadership; ICT infrastructure; ICT Industry; Human Capital; Legal and Regulatory Framework; Productive Sectors; Service Sectors; Public Service; Local Content; and Universal Access.

2.3 Conceptual framework

A conceptual framework was developed as shown in Figure 2.5. The framework was developed after undertaking an in depth review of literature related to the impact of ICT on organization performance. This reviewed gave researcher insights on important questions to be asked to TPC (Tanzania Posts Corporation), to understand well factors for ICT adoption. As in views of this study, factors influencing adoption of ICT in an organization has been treated as independent variables and are classified into two categories, namely; innovation characteristics and organization related factors. The innovation characteristics are drawn from diffusion innovation theory which includes relative advantage, compatibility, complexity, triability and observability while organization related factors include competition, survival in the market, change of customer needs and organization readiness. Hence, due to these factors TPC has been in a position to adopt ICT in its operation; however,

independent variables were controlled by intermediate factors which are guided by resource based theory. These factors include ICT infrastructure, ICT personnel and ICT capital. Intermediately factors can either affect positively or negative the performance of TPC, as a result, the impact of ICT in TPC can either be significant or insignificant.

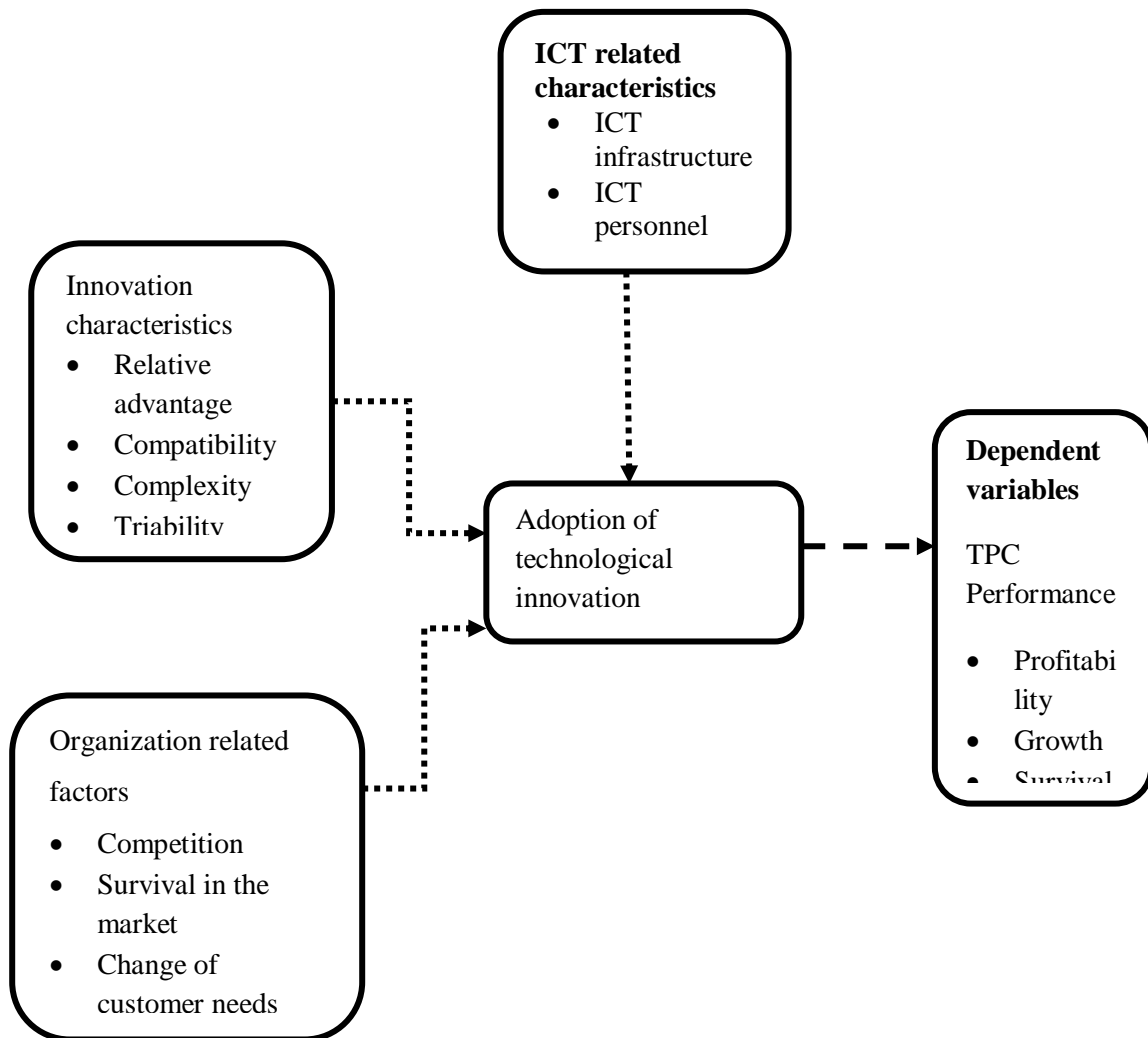


Figure 2.5: Conceptual framework

2.4 Case setting

2.4.1 Postal history in Tanzania

In Tanzania, the Post service has long history than independence history. The emergency of post services in Tanzania was established by Germany rule. When Tanganyika, Rwanda and Burundi were under Germany rule; the Headquarters of these Posts was in Dar es Salam. According to Post News (2011), the first letter sent with a stamp was in 1893 whereby human messengers were the one who were responsible for taking these letters from one center to another. With the development of railway transportation in Tanganyika the growth of postal sector was achieved. During 1927 Tanzania Postal Saving Bank was established and in 1933 the East African Posts and Telegraph Company was formed to cover Tanganyika, Kenya and Uganda. In 1951 East African Common Services Organization was formed which was responsible to supervise post and Telecommunications services and Post Office Saving Banks (Makuburi, 2011).

After independence of Tanganyika in 1961, the historical perspective of postal services could be traced on different periods. From 1961-1967 the Post and Telecommunications Services and Post Office Saving Banks were provided by East African Common Services Organization (EACSO). During the period of 1967-1977, the Post and Telecommunication Services were jointly provided by the East African Post and Communications Company. In 1977 Tanzania Posts and Telecommunication Company was formed as a public entity owned and its services regulated by the Tanzania Government (monopoly operated). In 1993 Policy Reforms liberalized communications sector, the Posts and Telecommunications services were separated (Makuburi 2011, 2011).

Postal services connect people and communities across borders, help sustain the flow and exchange of information, facilitate the movement of goods and the provision of financial and other services. With the development of Information Communication

and Technology (ICT) in Tanzania, Tanzania Posts Corporation (TPC) has been forced to adopt ICT in order to survive in the competitive contemporary business environment by automating its services through Post- global Modules, also by implementing the use of Data communication Network which allowed the Corporation's transmission and exchange of data as well as management information to be Very Small Aperture Terminal (VSAT) (TPC Annual Report, 2011). The postal services are the greatest legacy of communication and logistics, the greatest achievement of civilization. However, the changes of information and communication technology has been blamed for the decline in the number of users of postal services in Tanzania; therefore, this study aimed at revealing the impact of ICT on performance of TPC basing on data form 2002 up to 2011, assessing the period of ten years.

2.4.2 Status of postal services in Tanzania

According to Post News (2011), the current TPC network have 363 posts office in whole areas of Tanzania, among that, 167 provide all postal services and are operated by permanent employees. Also there 84 franchised post office which are operated by agents and 112 sub pot offices which are operated by agents but they provide necessary post services.

Postal services connect people and communities across borders, help sustain the flow and exchange of information, facilitate the movement of goods and the provision of financial and other services. Postal services therefore have a critical role to play in our collective efforts to accelerate development; including realizing the Millennium Development Goals, Tanzania Vision 2025 and therefore we need to continue to harness the potential of postal services as an instrument of development (URT, 2003).

2.4.3 Services offered by TPC

2.4.3.1 Mails and logistics business

Mail and logistic business are provided under Public Postal Operator (PPO) which has the mandatory for providing Universal Postal Services, Conveyance and delivery of Mails, Parcels, EMS national and international, provision of financial Services (TRCA, 2011). TPC provides a regular and priority mail delivery service. Customers must drop their mail at post offices and pick it up at postal boxes or, in some cases, at the counter. The performance of mail and logistics business in TPC does not do so much well due to number of factors like the shift of customers to other means of communication like mobile telephone. As it reported by Annual Report of TPC (2010), the number of items posted in domestic market for the year 2010 was 14.9 million compared to 16.7 million items in 2009. This count marks a drop in traffic by 11 percent. The decline in traditional letter correspondence indicates that many people have resorted to modern means of communications. The high penetration of the mobile phone even into the rural areas has drastically reduced the need to communicate by physical mail.

2.4.3.1.1 Ordinary correspondence

These are normal letters which can be friendly or official letters posted by individuals or organizations. Customers of these services can be registered for mail box service or cannot register, although in order for someone to deliver his or her parcel, he/she should have an identified mail box in a certain area.

2.4.3.1.2 Registered and insured items

These services are all available to household and businesses, whereby people are able to send mails and items which will be charged insurance charges in case of anything happen in the process of transporting it, a customer will be paid some amount for composition.

2.4.3.1.3 Parcel post

This service is for distributing parcels within and outside the country, special identity is placed on the parcel. A customer has the authority to specify way of handling parcel to addressee.

2.4.3.2 Courier and express business

2.4.3.2.1 EMS courier

EMS Courier offers pick-up and delivery of time sensitive documents, valuable items and merchandise within and outside Tanzania. TPC provides an express courier service to specific business addresses. Express mail deliveries are only made to business addresses. The express mail delivery is overnight within the same urban centre and guaranteed within one day between urban centers while Express services to more rural areas take up two days. Furthermore, according to TPC Annual Report of 2011 which reported that; in 2011 EMS amount was 7,529,632,099 compared to 2010 which was 6,038,462,790. The increase of income has been driven by increasing efficiency in providing services, improvement of resources and effort put into finding great clients and contracts.

2.4.3.2.2 City Urgent Mail

City Urgent Mail is positioned to collect letters, documents and packages from customers within the city and deliver the same to addressees much faster beyond customer expectations. City Urgent Mail is the fastest, reliable and affordable intra-city courier service offered by Tanzania Post Corporation (TPC) within towns. As it was reported by Post News (2011 p. 11), The Post Master General Mndeme said *that "City Urgent Mail will simplify the works of different institutions which are using TPC services because instead of going physically to Posts offices, they should just call and post clerks will go and pick up mails and parcel and distributing them to their destination."*

2.4.3.3 Financial and agency services

According to TPC Annual Report of (2011), Financial and agency business are not performing well due to an increase in number of service operators, especially mobile phone companies which are offering financial services. For example Electronic Money Transfer/Money Fax during the year 2011 the commission realized from this business was Tsh 175,984,494 depicting a downfall of 74 percent compared to Tsh 671,799,890 realised in 2010. This amount also depicts a downfall of 26 percent compared to budget of Tsh 239,128,212. In spite of this situation, TPC has tried to find partners who will use its network so as to be close to people and share cost of operations. As a chairman of Board of Directors, Kayandabila said that " *financial bank institutions, can have an opportunity to use the posts network in terms of buildings and residential post plots as center for cash withdraws (ATM), so that, they can be more close to the customers*" (Post News, 2010 p. 3) Financial and agency business involves many business including EMS fax message and EMS money transfer. Where by EMS fax Message handles urgent messages electronically by using wide EMS fax network within and outside the country. While EMS money Transfer uses advanced technology to remits money at affordable charges within the country. It offers quick, safer and efficient services.

2.4.3.3.3 Express Money Order (EMO)

Express Money Order is a way of payment when one desires to remit any amount of money up to a maximum limit of a single order to a payee anywhere in Tanzania. EMOs are obtained at Post Offices providing financial services in the country. EMOs provide a confirmation service known as advice of payment whereby, a payee confirms the acceptance of money to the sender.

2.4.3.3.4 Postal orders

Postal Orders are payment instruments issued by the Post Office in specific denominations. Postal orders are posted to distant payees who can encash them for the sum indicated thereon at Post Office counters. The bearer can travel with Postal

Orders instead of carrying hard cash and exchanges the same for money in transit or at his/her destination when in need at the nearest Post Office which provides financial services. Postal Orders are more or less treated in the same manner as bank cheques only that, neither a payer nor a payee is required to open an account (TPC Annual Report, 2004, 2005 and 2006).

2.4.3.3.5 Speed cash (Interstate Money Order)

Interstate Money Order/Speed Cash is an instant money transfer service within East Africa (Kenya, Uganda and Tanzania). With interstate Money Order one can use local currency of the respective country to remit money to other member states of East Africa without being compelled to exchange it in foreign currency. Interstate Money Order service is available at all Regional Post Offices and selected District Post Office in Tanzania (TPC Annual Report, 2007, 2008, 2009 and 2010).

2.4.3.3.6 Post giro services

PostGiro is a service operated by Tanzania Posts Corporation which enables clients to pay their customers or receive payments conveniently through the national wide Post Office network. The PostGiro service uses Giro system to operate, whereby participants hold accounts and payments are settled by credit transfer from one account to another. There are two levels in the operation of Giro system, namely Mature Giro and Semi- Giro system. Mature Giro is operated through Giro current Accounts, transfers between accounts and withdrawals from the accounts should take place while in Semi-Giro there is no need of opening account in this system. Semi-Giro system is divided into two types, namely in payment and out payment. In payment, Post office is working as an agent to collect cash for clients, that is, collecting funds/revenue on clients behalf such as contributions, sales of securities/shares, development levy, insurance premium, land and housing rent; newspaper / magazine registration fee / subscriptions, all kinds of trading licenses, school fees, and water /electricity / telephone payments. For Out payment, post office works as an agent to pay cash for clients such as share dividends, employee's

salaries, pension / gratuity, insurance benefits and buying securities / shares. At present Tanzania Posts Corporation Operates Semi Giro System which is popularly known as Postgiro (Post News, 2007).

2.4.3.3.7 Postal cash

Postal cash is a state-of-the-art efficient, economical and reliable money transfer service. Transmission of money is made electronically; cash payment is done promptly and conveniently. Advice of payment is given to a remitter upon request, transmission charges are affordable, and security of your money is assured (Post News, 2008).

2.4.4 Legal and regulatory frameworks

The current legal framework governing the postal sector in Tanzania emerged through a series of laws passed in 1993 as shown in Table 2.1 These laws divided the then Tanzanian Posts and Telecommunications Company (TP&TC) into two separate institutions overseen by an independent regulatory institution, the Tanzanian Communications Commission (TCC) and later on Tanzania Communication Regulatory Authority (TCRA) (Kavura, 2011). TPC is licensed by TCRA to conduct postal business and is also designated as the public postal operator responsible for providing universal postal services in Tanzania.

Table 2. 1: Legal and regulatory frameworks of TPC

	ACT	PURPOSE
1.	Tanzania Posts Corporation Act of 1993	Created TPC as a government corporation under the Ministry of communications and Transport and defined the roles of TPC.
2.	Tanzania Communications Act of 1993	Established the Telecommunications commission (TCC) to oversee both telecommunications and post
3.	Public Corporations (Amendment) Act of 1993	Established the Presidential Parastatal Sector Reform Commission (PSRC)
4.	Tanzania Telecommunications Company Incorporation Act of 1993	Defined the structure and working of the new telecommunication company
5.	Tanzania Communication Regulatory Act of 2003.	Established the Tanzania Communications Regulatory Authority (TCRA) as hybrid regulatory authority

Source (Kavura, 2011)

In carrying out its legal mandate, the Tanzania Posts Corporation is committed pursuing relentlessly the following objectives: to modernize the Post Office infrastructure; make the Post Office customer driven; provide quality products and services; make the Post Office a viable commercial entity; portray the social obligation of the Post Office; increase operational efficiency and increase market share.

2.4.5 Institutional framework

The Tanzania Posts Corporation is wholly owned by the Government and placed under the Ministry of Communications, Science and Technology. The Government through the same Ministry is responsible for policy formulation, general direction and control of postal sector in the country.

A Board of Directors is responsible for the general conduct of the Corporation's business affairs related to providing postal services and it is answerable to the Minister for Communications Science and Technology. The Chairperson of the Board

of Directors and Postmaster General, the Chief Executive Officer of the Corporation are both appointees of the President of the United Republic of Tanzania.

The Consolidated Holdings Corporation (CHC), which assumed the role of Presidential Parastatal Sector Reform Commission (PSRC), is responsible for divestiture and privatization of state owned enterprises in Tanzania. The cash strapped Tanzania Posts Corporation has been placed under the CHC which is to coordinate future developmental decisions on listed State owned institutions.

The Tanzania Communications Regulatory Authority (TCRA) is responsible for regulating and monitoring the performance of the postal sector as a whole. For this purpose, licenses that stipulate the regulatory conditions are issued to all postal service operators, respective fees and royalties are therefore paid.

2.4.6 The principal functions of the Corporation

According to Article 8 of the TPC Act of 1993 the principal functions of the Tanzania Posts Corporation have been stipulated as to:

- Provide a national postal service within the United Republic and between places outside the United Republic;
- Meet the industrial, commercial, social and household need of the nation for comprehensive and efficient postal services and so far as the Corporation consider reasonably practicable, to satisfy all reasonable demands for such services throughout the United Republic of Tanzania;
- Provide services by which money may be remitted (whether by means of money orders or otherwise) as the corporation thinks fit;
- Provide counters services for the Corporation's own and Government business and provided that they are compatible with those services and with principal objects set out in this subsection, for others as the corporation thinks fit.

2.4.7 Information and communication technology in TPC

In 2003, the dominant technology in TPC was the use of fax machines to expand the fax messaging networks and money fax services thus speeding up the transfer of money from one area of the country to another. Also computers were available for enhanced speed exchange and transmission of data and information within national postal network. During 2003, TPC website (www.posta.co.tz) was used as a means and medium of promoting its products and services inside and outside the country (TPC Annual Report, 2003).

In 2004, counter automation programme was made for all zones and head post office, internet cafes were enhanced in regions of Dar es salaam General Post Office, Mbeya Head post office, Zanzibar, Mtwara, Iringa and Kilimanjaro (TPC Annual Report, 2004).

In 2005, a trial use of counter automation software from Solution Limited of India was installed at Dar es Salaam General Post Office; up to 2005; TPC uses its website for promoting its services inside and outside the country. Also, in order to intensify use of e-mail communication, e-mail addresses were prepared for different TPC officers for use in their communication. Further more in; 2005, TPC in collaboration with Satcom networks Africa Limited sorted out problems facing the TPC data communication network. The exercise aimed at easier process of sending and receiving reports through the e-mail. In the process of modernizing postal network, TPC undertaken computerization projects which encompasses and computerization of back office processes computerization of the front office system in 14 post offices, also 16 internet cafes were opened (TPC Annual Report, 2005).

During 2006, TPC continued to install new counter automation programmes on trial from Reason Solutions Limited of India. These programs were installed in Dar es Salaam General Post office, Arusha, Zanzibar and Mtwara. The programme involved

sub-programmes, namely point of sale for providing counter services and communication module for transmitting information from regional post offices to the central server at the head quarters or vice versa. Also TPC installed new programmes at TPC headquarters for payment vouchers and money fax in terms of trial bases. Payment voucher software was meant for preparing payment vouchers electronically, with the objective of enhancing efficiency and financial control. In spite of installation of money fax programme at Dar es Salaam General Post office, Tanga, Zanzibar and Mtwara; the program had problems and the database version had to be upgraded, hence it was not functioning well (TPC Annual Report, 2006).

In 2007, TPC established the project for implementing an automated system for its businesses which called post global system so as to comply with the technological changes. The contract to implement this project was signed in October 2007 with Reason Solution Ltd from India which provided the application to be used in the automated system. Basing on empirical review from Annual Reports of TPC, it was from this point that, the focus of the use of ICT in this study draws its attention, due to the fact that many program since 2003 were installed, but were in form of trial bases and large part of the work were done manually, also the issue of connectivity and internet was not so much strong at that time in such a way that, most of TPC offices were not connected to the internet. In addition to that, not all the computers in counters were connected to the internet, also the back office systems were used in a very small ratio. According to TPC Annual Report (2007), the corporation has data communication network which connects its 14 Regional Post Offices. The post global application contained four modules, namely Point of Sale, Back Office and Management Information System, Domestic Money Transfer and Domestic Track and Trace. The following is a brief description of each of the module:

- The point of sale: this module includes interfaces to capture information generated from the services offered at the counter

- Back office and management information system (EMS): this module includes interfaces to capture detail summary of all transactions done by the clerk and produce reports of cash account and detail reports for all the services offered at that office.
- Domestic Electronic Money Transfer: this module offers instant money transfer services whereby a customer sends money to destination office and the recipient receives it at the same time at the destination Post office after presenting the required identifications
- Domestic track and trace: this module used for capturing information obtained from postal items that require accounting or tracking such as EMS mail, registered mails and parcel items. It is also the facility to track these items from point to point (TPC Annual Report, 2007).

In 2008, TPC launched the counter automation project where by postal global software was installed over the country in phases. Up to December 2008, implementation installation of the software had already been done at the postal head quarters and the following regional offices i.e. Dar es Salaam General Post Office, Arusha, Mbeya, Iringa, Moshi, Dodoma, Mwanza, Zanzibar, Bukoba, Morogoro, Tabora and Tanga (TPC Annual Report, 2008).

In 2009, India- Tanzania Center for Excellence in Information and Communication Technology (ITCoEICT) was initiated. This project was implemented in collaboration with the Government of India and the Government of Tanzania. The project will benefit nine post offices, installation of equipment had been done in Kijangwani (Zanzibar), Mwanza, Iringa, Mbeya, Arusha and Bagamoyo, but other regions were targeted but installation were not made, such as; Dodoma, Mtwara and Morogoro. These locations are intended to offer telemedicine solution, e-learning, e-education and tele-conferencing (TPC Annual Report, 2009).

In 2010 for the first time, the Corporation developed its ICT policy for its guidance and implementation. TPC continues to implement counter automation in phases, whereby, installations of the software had already been done at the Corporation's Headquarters and all regional head post offices and Zanzibar, rolling over to district levels. Furthermore, data communication network that allowed TPC transmission and exchange of data as well as management information continued to be obtained via V-SATs technology (TPC Annual Report, 2010). Also the government has established the Universal Communications Access Fund (UCAAF) as well as initiating a project called physical address and postcode, aimed at improving economic related activities. In 18th January 2010, launched the postcodes pilot project in Arusha.

In 2011, Department of Communication Systems implements various functions within corporation including:

- IPS-Track and Trace System: This system is used to monitor the regular letters and parcels, international registers which underwent modifications to be able to work appropriately and eliminate existing shortcomings which were causing in sending required information at the Berne Uswisi server.
- International Financial System (IFS): this system is used in transferring money between Uganda, Tanzania, Kenya, Comoro and Rwanda. The system is in a pilot of sending money between Tanzania and Burundi.
- Paymaster 7 System: this system is used to prepare reports that assist in paying staff salaries.
- Postal Information Network: it is used in sending information from one office to headquarters and from one office to another. This system did properly in collaboration with different company such as Satcom Networks Africa Ltd and TTCL (TPC Annual Report, 2011).

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Study Design

Major study design was a case study with multiple sources of evidence which is both qualitative and quantitative.

3.2 The Study Area

The study was conducted in Dodoma Urban District, Mbeya Urban District and Ilala. The researcher decided to choose Dodoma Urban District because Dodoma is the Capital city of Tanzania, being at the Centre of all regions it gives its popularity and quality of having all types of functions which are social, economic and political. Therefore users of Postal Services at this area can have homogenic and heterogenic characteristics. This helped to justify the results obtained from these different groups. Apart from that, Dodoma Urban District, that is, Dodoma Municipal Council, there are other five districts in Dodoma region. Administratively, the district has four divisions, 37 wards, 35 villages 39, 100 street and 222 hamlets. The district covers an area of 2769 square km characterized with both urban and rural settings of which the rural setting occupies about 80 % of the total area (Dodoma Municipal Council Profile, 2011).

Apart from Dodoma Municipality, Mbeya region has got 10 district councils whereby Mbeya Urban district is one of them. The City has two divisions, 36 Wards and 100 streets (Mbeya Municipal Profile, 2011). According to Vanraay (1989) “urban areas are source of creativity and technology and they are engines for economic growth, hence it was convenient to choose Mbeya Urban district since many economic, social and political development can be easily observed and studied.

Furthermore, Dar es Salaam City has unique status, being the major City of Tanzania and the centre of Government administration, industry, commerce and banking

activities, despite of the Government decision to move its capital to Dodoma. Dar es Salaam is also the major port City of Tanzania. It has more than 575 major industrial establishments, a Central Bank, Commercial Banks, foreign exchange bureaus, Insurance companies (including one state-owned) and the Dar es Salaam Community Bank – a Microfinance Bank jointly started and owned by City Council and the three Municipalities (Dar es Salaam City Council profile, 2004)

Administratively, Dar es Salaam has a regional administration headed by the Dar es Salaam Regional Commissioner. It also has a City council administration headed by the Mayor of Dar es Salaam. The City also has three Municipal Councils, namely Ilala, Kinondoni and Temeke. The three Municipalities are the three districts of Dar es Salaam Region as shown in Table 3.1 (Dar es Salaam City Council profile, 2004).

Table 3.1: The Number of Divisions, Wards, Streets, Villages and Hamlets in the three Municipalities of Dar es Salaam

Municipality	Division	Wards	Streets	Villages	Hamlets
Ilala	3	22	65	9	37
Temeke	3	24	97	15	62
Kinondoni	5	27	114	14	14
Total	11	73	276	38	113

Source: Dar es Salaam City Council profile 2004

3.3 Types and sources of data

Both primary and secondary data were used as methods of data collection.

3.3.1 Primary data

Questionnaire survey was employed to gather information, Appendices I, II and III also, unstructured personal interview was used whereby; interview schedule was also used to collect information. There were five categories of respondents each with its interview schedule; Appendices IV (a, b, c, d and e). Also observation was used to supplement the collection of information to other two techniques.

3.3.2 Secondary data

Secondary data were used in the method of data collection, where by different documents such as books, journals; official reports; brochures and electronics books, papers, reports and journals which were relevant to the study were used. Major sources of secondary information were the Mzumbe University library, Internet, Dodoma Postal Office, Mbeya Post Office, Dar es Salaam Post Office and General Post Office.

3.4 Target population

The target population of the study were households which were registered to mail service in TPC, TPC staffs from Dodoma Municipality, Mbeya urban district and Ilala Municipality in Dar es Salaam, non-registered customers of TPC, and public and private Institutions like schools, companies and industries.

3.5 Sample size

Sample size was obtained by multi stage sampling, where by Dodoma Municipality, Dar es Salaam City and Mbeya city acted as clusters. Starting by Dodoma region, 3 stage of sampling was developed. Where by the first stage was to select large primary sampling unit which was a region (Dodoma). The second stage was to select the divisions of Dodoma region where there were 4 Divisions, namely Zuzu, Hombolo, Kikombo and Dodoma Urban. The third stage was to select the wards found in Dodoma Urban Districts where by there were 22 Wards, from this stage the multi stage random sampling was used to obtain 25 respondents from different wards found in Dodoma Urban.

In case of Dar es Salaam City, 3 stages were developed. Where by starting with the first stage, was to select large sampling unit which was Dar es Salaam City. The second stage was to select 3 Municipals found in Dar se Salaam City that were, Ilala, Temeke and Kinondoni. The researcher was interested in Ilala District since many government offices were found in Ilala and also regarding to the total land mass area

Ilala had 210 kilometer square of land which was not so much big compared to Temeke (652), and Kinondoni which has 531. Therefore due to the area covered it was convenient for the student to collect data in Ilala and accomplish it on time. The third stage was to select three (3) divisions in Ilala. The fourth stage was to select 22 Wards in Ilala. From this stage the multi stage random sampling was used to obtain 25 respondents from different wards found in Ilala Municipality.

Further more for the case of Mbeya urban district 5 stages of sampling were developed. Where by the first stage was to select large primary sampling unit which was Mbeya City. The second stage was to select the 10 district where by Mbeya urban district was the main target. The third stage was to select divisions of Mbeya urban district whereby there were 2 Divisions. The fourth stage was to select the wards found in Mbeya Urban Districts where there were 36 Wards, from this stage the multi stage random sampling was used to obtain 25 respondents from different wards found in Mbeya Municipality Urban.

Therefore the total sample size was 75 but due to some obstacles occurred during data collection as it explained in Section 3.11 in Chapter Three; the actual sample size was 62 as shown in chapter four, section 4.1.1.

3.6. Sampling procedures

Purposive sampling techniques was used as non-probability technique to select the customers of postal service who were not registered, but they were using postal services, government Institutions, non-governmental institutions and the staffs from Postal Office. According to Denscombe (2007) purposive sampling is applied to those situations where the researcher already knows something about the specific people or events and deliberately selects particular ones because they are seen as instances that are likely to produce the most valuable data.

3.7 Data collection methods

3.7.1 Questionnaires

Open and closed structured questionnaires were used in the study during data collection. The method chosen was due to its strength in capturing empirical data from formal and informal sources (Kothari, 2004). The tools used were questionnaire for TPC registered customer (both public and private organization) (Appendix I), questionnaire for TPC Non registered customer (Appendix II), questionnaire for registered customer for mail box (Appendix III). These categories were due to the fact that, different people had different thoughts towards TPC performance. As it was reported by Post News (2004, p.7), Hugo Mvamba who was a Regional Manager in Pwani Post Office, he says *“many people have been thinking that now days Posts office is going to die, but I’m assuring them that post is proceeding well and will continue to exist”*. In additional to that, it was reported by Post News (2003), increasing losing its traditional clientele the letter writers that are shifting to other forms of communication media notably electronic media which are more convenient to them by way of accessibility and direct and indirect costs; therefore, customers are shifting from TPC traditional services to other forms of communication like mobile phone and internet. As it was reported by Postal Master General Mndeme that *“majority of those owning the 173,000 postal boxes are not private individuals in the country, but ministries, local governments, private companies and institutions”*, Post News (2011, p.6).

3.7.2 Interview

The study employed the interview method to strengthen data collection as questions were rephrased to make them clear in front of the respondents so that more relevant data were collected. The method chosen was due its ability to allow interaction process between the interviewee and the interviewer in the cause of data collection. The tools used were interview schedule for TPC staffs including; interview schedule for mail and logistic department (Appendix IV (a)), interview schedule for mail and

logistic department (Appendix IV (a)), interview schedule for courier and express business department (Appendix IV (b)), interview schedule for financial and agency business department (Appendix IV (c)), interview schedule for ICT department (Appendix IV (d)), and interview schedule for Regional Manager (Appendix IV (e)). The researcher decided to have this category because every department in TPC services faced its own challenges regarding to ICT adoption and usage; and this helped in avoiding hasty generalization of findings.

3.7.3 Observation

Observation is a method of data collection where data are obtained by the help of sense organs i.e seeing, hearing, smelling, testing and touching (Adam and Kamuzora, 2008). The researcher used non – participant (structured) observation as he could not become an integral part of the system but had a pre-determined set of issues to be observed (observation schedule) in the field such as availability of ICT infrastructures, availability of ICT personnel, technology used, nature of TPC services, and how customers have been saved.

3.7.4 Documentary Review

Secondary data were obtained through relevant documents including TPC Annual Reports, and Posta Journals. In addition to that, publications about TPC from relevant ministries under consultation. Relevant documents like National Post Policy (2003) as well as posts industry related Research reports were reviewed.

3.8 Data handling

This involves data processing, analysis and presentation.

3.8.1 Data Processing

Data were edited, classified, coded and tabulated before being presented.

3.8.2 Data analysis

Both qualitative and quantitative techniques were used to analyze the data through statistical tabulation including cross tabulation and frequency tables using Statistical Package for Social Science (SPSS) a computer program for descriptive statistics. Each specific objective had its own way on analysis due to its nature.

- To ICT technologies available at TPC

Under this specific objective, the researcher used qualitative and quantitative techniques because data were collected through interviews, questionnaires and official report from TPC which most of them were inform of descriptive. ICT technologies available at TPC were considered through computer usage, the use of internet and the use of telephone.

- To assess efforts used to improve production innovation in TPC

Under this specific objective, the researcher used qualitative techniques where by verbal and descriptive statements were offered. Efforts used to improve production innovation in TPC were considered through, ICT capital and ICT personnel.

- To assess performance trend before and after adoption of ICT in TPC

Specifically the researcher measured performance through collected units of mail and logistic business, financial and agency business, and courier business. The researcher used quantitative techniques to obtain mean and standard deviation. Where by eta squared was used to indicate the level of ICT effect in TPC. Before the application of the Eta Square a paired sample T. test was conducted to evaluate the impact of ICT adoption on TPC performance (refer to chapter IV section 5.2.1 . The following formula was used:

$$\text{Eta squared} = \frac{t^2}{t^2 + N - 1} = \frac{(0.758)^2}{(0.758)^2 + 14 - 1} = 0.57456 / 13.57456 = 0.04$$

From the formula, t stands for t-test, while N stands for Number of items

Eta squared is interpreted as the proportion of the total variability in the dependent variable that is accounted for by variation in the independent variable. It is the ratio of the between groups sum of squares to the total sum of squares (Levine & Hullet, 2002).

- In addition to that, the researcher measured performance through Marginal ratio, basing on variables found in the formula of Marginal ratio, specifically by looking on; operating income from mails and logistic business, financial and agency business, and currier services. The analysis was done through Ms- Excel by basing on Marginal ratio formula which is;

Marginal ratio= gross profit –income/ income x100.

After obtaining the marginal ratio of each year from year 2002 up to 2011, The researcher used quantitative techniques to obtain mean and standard deviation (before adoption of ICT in TPC, (2002 -2006) and after adoption of ICT in TPC, (2007-2011). Where by eta squared was used to indicate the level of ICT effect in TPC. Before the application of the Eta Square a paired sample T. test was conducted to evaluate the impact of ICT adoption on TPC marginal ration (refer to chapter IV section 4.5.2.2 . The following formula was used:

$$\text{Eta squared} = \frac{t^2}{t^2 + N - 1} = \frac{(0.116)^2}{(0.116)^2 + 10 - 1} = 0.013456 / 9.013456 = 0.001$$

From the formula, t stands for t-test, while N stands for Number of years

- Further more. Marginal ratio was used to calculate how well TPC is using its assets to make money. Trend analysis was considered so as to make a real picture of the impact.

$$\text{Return on Asset} = \frac{\text{Net Profit}}{\text{Average Assets}}$$

$$\text{Return on Asset} = \frac{\text{Net Profit}}{(\text{Opening total assets} + \text{Closing total asset})/2}$$

Year: 2008

$$ROA = \left[\frac{217,186,764}{\left(\frac{20,446,027,388 + 22,603,434,910}{2} \right)} \right] \times 100$$

$$ROA = \left[\frac{217,186,764}{21,524,731,150} \right] \times 100$$

$$ROA = [0.01] \times 100$$

$$ROA = 1\%$$

Year: 2009

$$ROA = 0\%$$

Year: 2010

$$ROA = \left[\frac{256,270,044}{\left(\frac{22,360,086,966 + 23,213,905,713}{2} \right)} \right] \times 100$$

$$ROA = \left[\frac{256,270,044}{22,786,995,848.50} \right] \times 100$$

$$ROA = [0.01] \times 100$$

$$ROA = 1\%$$

Year: 2011

$$ROA = \left[\frac{330,443,183}{\left(\frac{23,213,905,713 + 23,685,405,793}{2} \right)} \right] \times 100$$

$$ROA = \left[\frac{330,443,183}{23,449,655,762} \right] \times 100$$

$$ROA = [0.01] \times 100$$

$$ROA = 1\%$$

- To explore customer responsiveness towards TPC services in the era of ICT

Under this specific objective, the researcher used qualitative and quantitative techniques because data were collected through interviews, questionnaires and official report from TPC which most of them were inform of descriptive.

3.8.3 Data presentation

Tables and figures were used in this report to present key findings of the study.

3.9 Reliability, validity and generalization

According to Maxwell (1996), validity defined as the correctness or credibility of a description, explanation, interpretation, account or conclusion. This implies that validity refers to whether the instruments “measure what they are intended to measure” (Ballinger, 2000 cited in Makombe 2006). Distinguishes three type of validity, namely criterion, content and construct validity. Reliability refers to the degree to which the same results would be obtained in repeated attempts of the same test (Gall & Gall in Ballinger; 2000 cited in Makombe 2006). In this study, several measures were taken to ensure the validity of the study.

First in order to have valid descriptions, the researcher personally conducted all the personal interviews to ensure consistency of the research process and resultant data. Second the questionnaire was pre-tested in a pilot study in order to validate the questions. Another measure achieved through the testing of the questionnaire was to get the point of view of the target population of the study. Third, the in depth interview was used after the unstructured interviews the researcher was able to cross check the accuracy of the information provided previously. Fourth, with regard to ensuring the truthfulness of data, the researcher took several precautionary measures as follows: confidentiality assurance was given to encourage interviewees to talk without fearing that readers would identify them. As Adam and Kamuzora (2008) inferred informing the respondents the true purpose of research is one of their rights and it relieves them at the time of giving responses. Fifth, the collection of baseline information through unstructured questionnaires enabled the researcher to organize the data in simple statistics that facilitated the analysis.

With regard to ensuring the reliability of the study; the researcher conducted personal administering questionnaires and in depth interviews, so as to be confident with the

study. The generalization of the study refers to what extent the study findings and conclusions can be generalized to the universe (Malhotra, 2007). Hence, the study results can be internally and externally valid due to the theories applied, sample size used and context applicability.

3.10 Ethical Issues

In any research conducted, there are ethical issues that need to be taken into consideration from designing the questionnaire, administering the questionnaire and publishing the report. According to Aaker et al., in Adam and Kamuzora, 2008, ethics refers to moral principles or values that generally govern the conduct of an individual or group. This study took into considerations ethical issues which include the informed consent, confidentiality and stating the consequences of the study. In this study, the researcher had an introduction letter from the Mzumbe University as indicated in Appendix (V(c)). That detailed the aim of our study. In Tanzania Post Corporation at Head Equator, the researcher was given an acceptance letter which explained the aim of the study and it introduces the researcher to the study area as indicated in Appendix (V(a&b)). Furthermore, it is important to note that the researcher has ethical responsibility to follow scientific procedures to come up with study conclusions and implications. The researcher clearly defined research problem. The problem was supported by the theoretical and empirical literature review and was supervised by a Professor until the last stage of report writing and submission.

3.11 limitation of the study

During this study, the researcher encountered several limitations. For instance, sometimes it was difficult to get respondents on time as they had other activities to perform. So the researcher had to go back to collect data several times to meet the respondents. Not only that but also, during data collection some organizations were reluctant to give out information concerning TPC due to their code of conduct which prohibit them to give out information about other organizations. Therefore, the researcher was either obliged to choose another similar organization or persuade the

subjects to accept filling in questionnaires or being interviewed. Furthermore, some organizations were given questionnaire, but after a long period of follow up, they never return it back. Additionally, the sample for impact of ICT on the TPC was presumably too small because the data that were available at the time of this study were annual ones.

CHAPTER FOUR

PRESENTATION OF FINDINGS

4.1 Introduction

This chapter presents findings based on four research questions. The presentation of findings is in the sequential order as they appear in research specific objectives, which are to: explain ICT technologies available at TPC; assessing efforts used to improve product innovation; assess the performance trend before and after adoption of ICT in TPC; and explore customer responsiveness towards TPC services in the era of ICT. As it has been explained in chapter three research findings and analysis of the results obtained through questionnaires, interview, observation and documents.

4.2 Sample characteristics

4.2.1 Respondent's category

The study conducted, had five types of respondents based on the assumption that, different categories of respondents would give the researcher a bigger picture and enable triangulation of data. The findings are presented in Table 4.1. Findings from the study, Table 4.1 shows that 33.3% (5), 33.5% (5), and 33.3% (5) of respondents in Mbeya Municipal, Ilala Municipal and Dodoma Municipal respectively, were registered customers of TPC services for mail box services. Whereas, 15.4% (2), 46.2% (6) and 38.5% (5) of respondents in Mbeya Municipal, Ilala Municipal and Dodoma Municipal respectively, were non-registered customers of TPC services for mail box services. In addition to that, 20.0% (2), 30.0% (3), and 50.0% (5) of respondents in Mbeya, Ilala, and Dodoma Municipalities respectively; these were public organization while 23.1% (3), 38.5% (5), and 38.5% (5) of respondents in Mbeya, Ilala, and Dodoma Municipalities respectively; these were private organizations. Furthermore, 18.2% (2), 45.5% (5), and 36.4% (4) of respondents in Mbeya, Ilala, and Dodoma Municipalities respectively; these were TPC staffs.

Table 4.1: Respondent's category

Category	variables	Responses						Total	
		Mbeya Municipal		Ilala Municipal		Dodoma Municipal		No.	%
		N=62	(%)	N=62	(%)	N=62	(%)		
Type of respondents	registered customer of TPC household	5	33.3	5	33.3	5	33.3	15	24.2
	non registered customers of TPC	2	15.4	6	46.2	5	38.5	13	21
	public organization customers of TPC	2	20.0	3	30.0	5	50.0	10	16.1
	private organization customers of TPC	3	23.1	5	38.5	5	38.5	13	21
	Staffs	2	18.2	5	45.5	4	36.4	11	17.7
	Total		14	22.6	24	38.7	24	38.7	62

4.2.2 Position of respondents

This section presents data on positions of TPC staff who were interviewed in this study. The results from Table 4.2 show that 33.1 % (1), 33.1% (1) and 33.1% (1) of respondents in Mbeya, Ilala and Dodoma Municipalities respectively; these were Regional Managers while 50.0% (1) of respondents in Mbeya and 50.0% (1) of respondents in Ilala Municipalities; these were Senior System Administrators.

The study found that in Dodoma Municipality a Post Clerk was the one who was responsible for administering ICT systems. This implies that the researcher had ideas on what type of data she wanted to collect and from whom data could be obtained. Hence the researcher had to use purposive sampling.

Table 4.2: Respondents by position

Category	variables	Responses						Total	
		Mbeya Municipal		Ilala Municipal		Dodoma Municipal		No.	(%)
		N=1 1	(%)	N=1 1	(%)	N=1 1	(%)		
Position	Regional manager	1	33.3	1	33.3	1	33.3	3	27.3
	Senior system administrator	1	50.0	1	50.0	0	0	2	18.2
	Assistance manager	0	0	1	50	1	50	2	18.2
	Principal post officer	0	0	1	100	0	0	1	9.1
	Postal controller	0	0	1	100	0	0	1	9.1
	Post clerk	0	0	0	0	1	100	1	9.1
	Senior post officer	0	0	0	0	1	100	1	9.1
	Total		2	18.2	5	45.5	4	36.4	11

4.2.3 Respondents working experience

These data helped the researcher to know the background of TPC by using respondents who had spent their career working in TPC. The working experience of respondents is presented in Table 4.3.

Table 4.3: Respondents working experience

Category	variables	Responses						Total	
		Mbeya Municipal		Ilala Municipal		Dodoma Municipal		No.	(%)
		N=11	(%)	N=11	(%)	N=11	(%)		
Years of working at TPC	5 years	1	50	1	50	0	0	2	18.2
	6 years	0	0	0	0	1	100	1	9.1
	17 years	0	0	1	10	0	0	1	9.1
	23 years	0	0	0	0	1	100	1	9.1
	25 years	1	50	0	0	1	50	2	18.2
	26 years	0	0	1	50	1	50	2	18.2
	37 years	0	0	2	10	0	0	2	18.2
	Total		2	18.2	5	45.5	4	36.4	11

According to Table 4.3, the study reveals that staffs that held high positions such as Regional Managers and principal Postal Office had many years working experience.

4.2.4 Age of respondents

This study sought to know the age of respondents. Table 4.4 indicates that respondents 0% were below 18 years in both Mbeya and Ilala Municipalities while in Dodoma Municipality it was 100% (1). In similar manner, respondents who fell on age between 18 up to 25 were 20% (1) in both Mbeya and Dodoma Municipalities while in Ilala Municipality they were 60% (3).

Table 4.4: Age of respondents

Category	variables	Responses						Total	
		Mbeya Municipal		Ilala Municipal		Dodoma Municipal		No.	(%)
		N=62	(%)	N=62	(%)	N=62	(%)		
Age group	<18	0	0	0	0	1	100	1	1.6
	18-25	1	20	3	60	1	20	5	8.1
	26-35	6	23.1	7	26.9	13	50	26	41.9
	36-45	5	45.5	4	36.4	2	18.2	11	17.7
	46+	2	10.5	10	52.6	7	36.8	19	30.6
Total		14	22.6	24	38.7	24	38.7	62	100

The study found that the majority of the respondents were aged between twenty six and above; this implies that young people were very easy to adopt new technologies rather than use the old technology. Apart from that, this finding also implies that, aged people have more experience with postal services than young ones.

4.1.5 Gender of respondents

The study reveals that 22.2% (8), 44.4% (16) and 33.3% (12) were male in Mbeya, Ilala, and Dodoma Municipalities respectively, as shown in Table 4.5.

Table 4.5: Gender of respondents

Category	variables	Responses						Total	
		Mbeya Municipal		Ilala Municipal		Dodoma Municipal		N=62	(%)
		N=62	(%)	N=62	(%)	N=62	(%)		
Gender	Male	8	22.2	16	44.4	12	33.3	36	58.1
	Female	6	23.1	8	30.8	12	46.2	26	41.9
Total		14	22.6	24	38.7	24	38.7	62	100

The study reveals that men were still found TPC services were useful regardless of the method of accessibility of the services while women opted for easy way of communication.

4.2.6 Educational level of respondents

The study reveals that 25% (9) of respondents in Mbeya, 36.1% (13) of respondents in Ilala and 38.9% (14) of respondents in Dodoma Municipalities had secondary education as shown in Table 4.6.

Table 4.6: Respondents by Education

Category	variables	Responses						Total	
		N=62	(%)	N=62	(%)	N=62	(%)		
Education level	Primary education	1	11.1	5	55.6	3	33.3	9	14.5
	Secondary education	4	23.5	6	35.3	7	41.2	17	27.4
	Post secondary education	9	25	13	36.1	14	38.9	36	58.1
Total		14	22.6	24	38.7	24	38.7	62	100

It was observed from the findings that education enables individuals to use ICTs; people with higher level of education were expected to be positively related to ICT access and usage unlike people with low education.

4.2.7 Marital status of respondents

As can be seen in Table 4.7, there was a mixture of single and married people in almost all regions at the time of data collection.

Table 4.7: Marital status of respondents

Category	Variables	Responses						Total	
		Mbeya Municipal		Ilala Municipal		Dodoma Municipal			
		N=51	(%)	N=51	(%)	N=51	(%)	No	(%)
Marital status	Single	8	25.8	11	35.5	12	38.7	31	60.8
	Married	4	20.0	8	40.0	8	40.0	20	39.2
Total		12	23.5	19	37.3	20	39.2	51	100

The study revealed that 25.8% (8), 35.5% (11) and 38.7% (12) of respondents were single in Mbeya, Ilala, and Dodoma Municipalities respectively while 20.0% (4), 40.0% (8) and 40.0% (8) of respondents were married in Mbeya, Ilala and Dodoma municipalities respectively.

4.2.8 Respondents occupation

Findings from the study show that 42.9% (3) of respondents from Mbeya Municipality were business people, 37.5% (3) of respondents from Ilala Municipality were employed and 33.3% (2) of respondents from Dodoma were students as shown in Table 4.8.

Table 4.8: Respondents occupation

Category	Variables	Responses							
		Mbeya Municipal		Ilala Municipal		Dodoma Municipal		Total	
		N=62	(%)	N=62	(%)	N=62	(%)	No	(%)
Occupation	Farmer	1	16.7	4	66.7	1	16.7	6	9.7
	Employed	9	21.4	16	38.1	17	40.5	42	67.7
	Business	3	42.9	2	28.6	2	28.6	7	11.3
	Student	1	14.3	2	28.6	4	57.1	7	11.3
Total		14	22.6	24	38.7	24	38.7	62	100

These findings imply that postal services are crucial in our daily activities since every one need to communicate regardless of what he or she does and for what purpose.

4.3 ICT technologies available at TPC

4.3.1 Computer usage

The study found that computers were used in TPC operations since the establishment of TPC. Although the uses of computers was only for keeping records, typing,

designing and report writings, but these computers were not connected to internet. As one respondent said *“the use of computer in TPC is not a new thing, but these computers were not connected to internet, hence were not communicated”* (Interviewee in Dar es Salaam Post Office, 9th May, 2013).

In addition to that, the study found that TPC had tried to use internet in its operations so as to enable people to communicate through computers. Hence as it was discussed in Chapter Two (See, Section 2.4.7) with the process of TPC automation its services through post global system, it has helped in speeding up the work and accomplishing many tasks easily. When respondents were interviewed about the use of computers in TPC operation; one respondent had this to say:

“Due to the use of computer and internet many works have been easily done, for example. Trace and track the parcel and mails of a customer, and also keeping records. During the time of manual work, it was difficult to trace the records of even three month back, simply because items and other documents were recorded in counter books and were kept in store.” (Interviewee in Dodoma Regional Post Office during data collection 3rd, May 2013).

4.3.2 Use of telephone

The study found that TPC used fixed telephone and mobile telephone to communicate with customers and staffs of TPC. When respondents were interviewed about the use of telephone in TPC services; one of respondent said:

“We receive different calls from different customers who have different needs. Fore stances there are some customers who want to know our prices, others want to know about products and others can complain about any thing they felt unsatisfactory. Apart from that, we have a core group which connects the key and influential staffs like managers, accountants any other key staff who needs to communicate through telephone so that he/she can accomplish a certain work easily or can provide a quick feedback.” (Interviewee in Dar es Salaam Post Office, 9th May, 2013).

Furthermore, TPC used telephone for providing different services including City Urgent Mail (CUM), which dealt with picking up, transporting and delivery services

of letters, newspapers, journals, periodicals, brochures, leaflets and similar printed matters, within big Cities like Mbeya, Dar es Salaam and Mwanza. Through the use of telephone, identified customers who were recognized by TPC, could just call to TPC and they could obtain a CUM services and they could pay the money instantly. As one of respondents said:

“With CUM services, it acts as a messenger, so customers can just call and ask for a service, so there is no need of a person to come.” (Interviewee in Dar es Salaam Post Office, 9th May, 2013).

4.2.3 The use of Internet

The study found that, one of the factors caused TPC to adopt ICT is survival in the market, as it was discussed in Chapter Two (refer, Section 2.2.8). The Corporation operates internet cafes’ installed at all of its regional head post offices. The internet at post offices makes it possible for many people to have access to the web at affordable rates. As one of respondent said:

“Our concern is customers, who come to the post office to post letters, parcels or own a mail box, should also be in the position, to access internet services; So that they can transact their business through the internet and rely on the post to deliver the packages. (Interviewee in Mbeya Post Office, 16th May, 2013).

Furthermore, the study found that with the help of website (www.posta.co.tz) and e-mail address which is pmg@posta.co.tz, has helped in advertising TPC services and expand their activities. As one of respondents said:

“With the ability of customers to trace and track their parcels and mails, it has built confidence to the customers; it also shows reliability of the services.” (Interviewee in Mbeya Post Office, 16th May, 2013).

4.4 Efforts improving product innovation in TPC

4.4.1 Investment in ICT (ICT capital)

Table 4.9 shows capital invested in ICT adoption in TPC; the findings revealed that the corporation had a capital commitments related to counter automation project amounting to 200, 452, 458; 279,960,000; 491,040,000; 450,000,000 and 450,000,000 in 2006, 2007, 2008, 2009 and 2010 respectively. Investing in ICT was a priority to TPC in spite of shortage of funds to enable quick adoption of innovation in all post offices in the country.

Table 4.9: Capital invested in ICT adoption in TPC

year	2006	2007	2008	2009	2010
cost	200,452,458	279,960,000	491,040,000	450,000,000	450,000,000

Source: TPC Annual Report (2007, 2008, 2009, 2010),

4.4.2 Service automated

Improving the postal production process is one part of the coin and the other part is constituted by the transformation and improvement of the postal products, in order to do this, findings from the study revealed that; TPC enhanced the use of ICT by automated system for its business through post global system. For example one of respondents (during interview in Dar es Salaam General Post Office, 10th May, 2013) said:

“the purpose of improving the services so as to attract more customers and generate more revenue but not meant for retrenchment, hence staffs together with customers, are able to trace and track parcels and mails.”

As one of respondents said; “through counter automation project, we have manage to connect 85 post offices up to 2012, also we have a project called Community Information Center (CIC)”. (Interviewee in Dar es Salaam General Post Office, 13th May, 2013) When respondents were asked what does CIC provides, one of respondents said; services expected

from the CIC include e-learning, e-medicine, e-education and tele-conferencing.” (Interviewee in Mbeya Post Office, 16th May, 2013).

4.4.3 ICT personnel

The study found that establishment of ICT department in TPC was an effort towards service innovation in TPC operations. ICT personnel in TPC were responsible for hardware and software. Hardware involved all the physical structures including, computer, monitor, fax machine, photocopy machine, printers, wires and cables while software was any set of instructions that informed the hardware what to do. For example Microsoft Word, web browser and post global system. When respondents were asked, on duties a system administrator performed, one of respondent said;

“We are helping other staffs who are end user, in using different programmes, because not all the people are competent in using the system. For example, a computer can display a certain message on the screen, and some one may fail to understand it hence she or he needs a help, also, we are responsible to learn and to be familiar with the system operations, installation and maintenance” (Interviewee in Mbeya Post Office, 16th May, 2013)

Since adoption of technology was a process, the study found that there was one person in every regional branch that was responsible for ICT operation in the organization. When respondents were asked if there was a person in organization special for ICTs, one of respondent from Dodoma region said:

“We have a system administrator, who is responsible for every thing regarding software and hardware, but this person is also a post clerk, this is because the management does not have enough money to employ two staff at a go given the economic situation.” (Interviewee in Dodoma Post Office, 4nd May, 2013).

Further more, the study found that one of the contributions of system administrator in TPC was to help the smooth running of activities. One of respondent said

“We don’t get any problem in using computer and internet, simply because we have ICT experts who respond quickly whenever we face any difficulties.” (Interviewee in Dodoma Post Office, 4nd May, 2013).

4.5 Performance trend before and after introducing ICT in TPC services

4.5.1 Type of services used by people

4.5.1.1 Mail and logistics business

Findings from the study in Table 4.12 show that about 48 (41.4%) of respondents used normal mail letters. This implies that in spite of development of other means of communication like; mobile phone and internet, people are still using physical mail. In addition to that, findings from the study in Table 4.10 show that about 4 (10.3%) of respondents wrote friendly letters and 27 (69.2%) of respondents wrote official letters. This means that people rarely write friendly letters and post them through Post office, during data collection through personal administering questionnaire one of respondent said,

“It is now three years since I wrote a friendly letter. I last received a letter last year from my aunt who lives in Mbeya. I mostly use my cell phone to communicate; I call or send text messages”. (Unstructured questionnaire for registered customer in Mbeya Municipality 14th May 2013).

Table 4.10: users of letter writing

Variable	Frequency	Responses (%)
Friendly letters	4	10.3
Official letters	27	69.2
Both	8	20.5
Total	39	100.0

Table 4:11 Mail Volume

Particulars	years									
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
MAIL VOLUME (000)										
Domestic	20.4	18.2	19.3	17.7	15.9	14.2	16.7	16.6	14.9	17.2
International	6.7	6.7	7	7.9	7.3	6.3	7.6	7.9	8.2	9.7

The Gross Domestic Product (GDP) in Tanzania expanded 7.50 percent in the first quarter of 2013 over the same quarter of the previous year. GDP Annual Growth Rate in Tanzania is reported by the National Bureau of Statistics (NBS). Tanzania GDP Annual Growth Rate averaged 7 Percent from 2002 until 2013, reaching an all time high of 11.30 Percent in December of 2007 and a record low of 2.90 Percent in December of 2006. (NBS Report 2013)

In spite of development of population growth, the government faces economic crises due to the fact that there was world economic crisis. Due to this the performance of mail in TPC services there were low decrease of mail volume from 2002 up to year 2013 as it shown in Table 4:11. Hence the researcher draws out conclusion on these that with the increase of population which leads to the increase of GDP there has been stiff competition among the mail services provider especially bus courier, mobile phone and the use of internet in Tanzania. This has leads to the decrease or fall of mail volume year by year as it was indicated in Table 4.11

Furthermore, in spite of users of TPC using other means of communication like mobile phone, internet etc. people still see the importance of using physical mail and there is a need of someone to register for mail box services as opinions of the customer shown in Table 4.12.

Table 4.12: Opinions of customers towards mailbox registration

Reasons	Frequency N=40	Responses (%)
To avoid disturbances of using some one's mail box	5	12.5
TPC has wide network coverage at that time	11	27.5
It is a condition of having recognized address for a company	4	10.0
To simplify communication needs	18	45.0
It is a basic service in life	2	5.0
Total	40	100.0

Table 4.11 shows that about 18 (45.0%) of respondents said those mail boxes simplify communication needs. Where 11 (27.5%) of respondents had long time registration of mail box service because TPC had strong physical net work.

4.5.1.2 Financial and agency business

Findings from the study in Table 4.12 show that about 48 (41.4%) of respondents used normal mail letter compared to other TPC services. About 15 (12.9%), 7 (6.0%), and 6 (5.2%) of respondents had use western union, paying for school fees and Post giro, respectively. Basing on findings, one of the interviewees said:

“I heard TPC are providing financial services, but I have never used it, because I can easily transfer my money through my phone” (Unstructured questionnaire for registered customer in Dodoma Municipality 4th May 2013).

And another one said “TPC financial services are secured, trusted and not much expensive; but the only problem is the method of accessing that service. Since you need to go to post office during the working hours so that you can either send or receive your money, unlike with my mobile phone through Tigo and M-pesa, I can receive and send money anytime and anywhere.” (Unstructured questionnaire for unregistered customer in Ilala Municipality 7th May 2013).

Table 4.13: Number of respondents using TPC services

Variables	Responses	
	Frequency	Percentage (%)
Normal mail letters	48	41.4
EMS mail	33	28.4
Payment of school fees	7	6.0
Post Giro	6	5.2
Western union	15	12.9
Registered mail	7	6.0
Total	116	100

Moreover, the study found that among 51 (82.3%) of respondents who were interviewed, they said that they physically accessed TPC services. This implies that the mode of technological adoption used in TPC has not yet been communicated to the customer due to the nature of their services, which most of the part is tangible. In addition to that, the study found that through the use of Postal Global System;

different models were used to provide financial services including: electronic Money Transfer and Point of sale. These systems had only been installed in two servers, namely regional and central TPC head quarters. Hence basing on Post rules, these servers must be monitored and used by system administrators, and because Post office is a government Institution, and it carries a lots of government documents; it is not easy to install these servers anywhere or give any person to use it far away from their dominant and identified offices. As one of interviewee said:

“it is true that, sometimes we fail to compete in providing financial services, due to our systems and this is because the post global system is not divided in a way that it can be shared by other people as mobile phone companies operating through registered agents. This is due to the fact that, our rules and most of time we are dealing with government issues which needs lots of precautions and secrets” (Interviewee in Mbeya Post Office, 16th May, 2013).

4.5.1.3 Courier business

Findings from the study in Table 4.12 show that 33 (28.4%) of respondents used EMS mail. This finding is similar to TPC Annual Report (2011) which asserts that the performance of courier business shows some progress especially with domestic business unlike with international business as shown in figure 4.1 this is due to stiff competition from DHL, TNT, NNB and bus courier. Also, it was because mail and parcel items which were sent from outside the country were larger than number of mail and parcel items which were sent from inside the country; this led to high operational cost (see Figure 4.1).

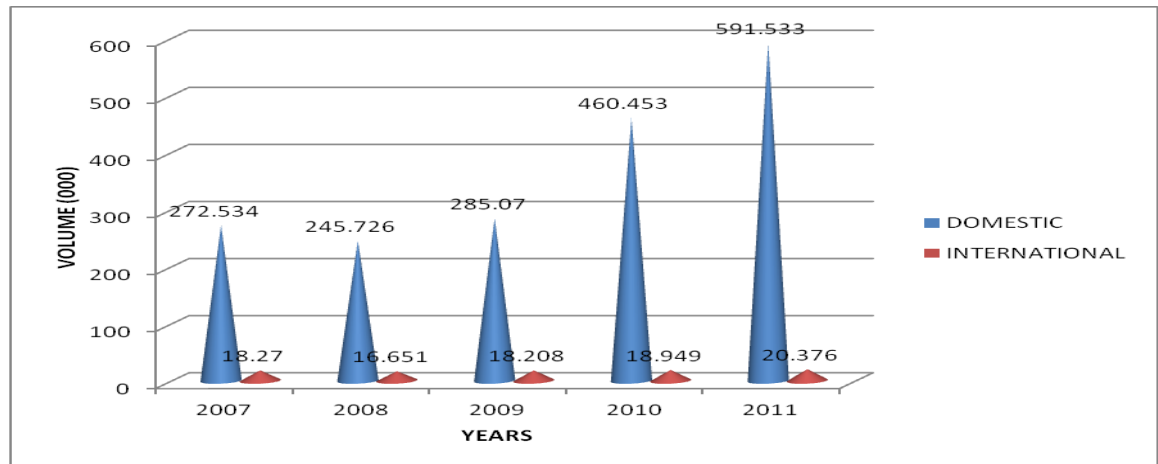


Figure 4.1: courier business

Source: (TPC Annual Report, 2011).

Furthermore, in spite of completion from other courier companies; people were satisfied with TPC services due to different reasons. Findings from the study as shown in Table 4.13 show that 9 (20.0%) of respondents said that parcel delivered promptly, 6 (13.3%) of respondents mentioned affordable price and easy access while 5 (8.1%) said due to reliable services. For example, one respondent had this to say:

“We have decided to establish different methods of transporting EMS through the use of vehicles and motorcycles, so that we can enable quick door to door deliver services” (Interviewee in Dar es Salaam Post Office, 9th May, 2013).

Table 4.14: Reasons for customer satisfactions towards TPC services

Variables	Frequency	Responses (%)
Good customer services	1	2.2
Affordable price and easy to access	6	13.3
Reliable services	5	11.1
Safely delivering of mail	5	11.1
Obtained their money on time	6	13.3
Timely delivering of mail	4	8.9
It meets customers needs	7	15.6
They simplify other needs like payment for school fees	2	4.4
Parcel delivered promptly	9	20.0
Total	45	100.0

4.5.2 ICTs and their impact on TPC performance

4.5.2.1 ICT impacts on items posted

As discussed in Chapter Four Sections (4.3), TPC used ICT hardware and software in its operations. Therefore, when assessing TPC performance the study focused on assessing mail and logistic units, financial and agency business units and courier business collected items. Mail and logistic business involved Ordinary correspondences, registered and insured items, parcel post, fax messages and sales of Postage stamps and philatelic products. While Courier and express business included; EMS courier domestic and international, apart from that, financial and agency business involved Electronic Money Transfer, Express Money Order (EMO), Postal Orders, Speed Cash (Interstate Money Order), Western Union Money Transfer (WUMT), and Post Giro.

Table 4.15: Paired samples Test of items posted

	Paired differences							
	Mean	Std. deviation	Std.Error Mean	95% confidence level	95% confidence level	t	df	Sig.(2- tailed)
				Lower	Upper			
Pair 1: Before adoption of ICT- After adoption of ICT	- 263.7642 9	1302.18627	348.0239 2	-1015.62425	488.09568	-758	13	.462

A paired sample t-test was conducted to evaluate the impact of ICT adoption on TPC’s performance. From the results presented in Table 4.12, there was a statistically insignificant increase in performance from time 1 ($X^2=590.8286 \times 1000$, $SD= 815.21 \times 1000$) to time 2 ($X^2= 854.592 \times 1000$, $SD =1681.32 \times 1000$), $t(13) = -0.758$, $P= 0.462$ (two tailed). Then mean increase in performance was 263.76429×1000 with a 95% confidence interval ranging from -1015.62425 to 488.09568×1000). The eta squared statistic (0.04) indicated very small effect size. Given the theoretical perspective of Eta Squared, the level of effects ranges: < 0.01 is negligible effect, 0.01 up to 0.06 is small effects while from 0.06 up to 0.14 is large effects; however, literature does not suggest which range of effect is the best. This implies that the impact of ICT in TPC services is insignificant.

4.5.2.2 ICT impacts on marginal ratio

A paired sample t-test was conducted to evaluate the impact of ICT adoption on TPC’s Marginal ratio. From the results presented in Table 4.13 there was a statistically insignificant increase in marginal ratio from time 1 (before adoption of ICT); $1(X^2= 57.8000 \times 1000$ standard deviation ($SD) = 14.20211 \times 1000$) to time 2 (after adoption of ICT); $2(X^2=74.8000 \times 1000$, Standard Deviation ($SD) = 6.54352 \times 1000$), t- test (-1.999), significance of Paired test = 0.116 (two tailed). Then the mean increase in marginal ratio was -1.521×1000 with 95% confidence interval ranging from -24.51929 to -5.9029×1000). The eta squared statistic (0.001) which is

negligible effect size, given the theoretical perspective of Eta Squared, the level of effects ranges: < 0.01 which is negligible effect, 0.01 up to 0.06 is small effect while from 0.06 up to 0.14 is a large effect. Although the literature does not suggest which range of effect is the best.

Table 4.16: Paired samples Test of marginal ratio

	Paired differences							
	Mean	Std. deviation	Std. Error Mean	95% confidence level	95% confidence level	t	df	Sig.(2-tailed)
				Lower	Upper			
Pair 1: Marginal ratio; Before adoption of ICT- After adoption of ICT	-1.700E1	19.01315	8.50294	-40.60795	6.60795	-1.999	4	.166

4.5.2.3 ICT impacts on Return on Asset (RoA)

This ratio shows how well a company used its assets to make money. Basically, the premise is on how well a company used its assets to generate revenue; however, it goes a long way toward telling the tale of its overall profitability. For effective ratio analysis, one needs to use similar types of companies or measure RoA for the same company over a period of years. (This approach, known as trend analysis, looks at the same ratios over several time periods). Since, computers, telephone and internet are assets; it was worth for a researcher to consider Return on Asset as a measurement variable of performance in TPC.

Table 4.17: Data based on net profit and total assets of TPC

year	Net profit	Total assets
2002	-1,529,750,471	15,286,926,995
2003	-1,321,076,596	16,412,598,530
2004	-90,048,525,674	16,222,907,760
2005	-21,445,933,601	17,540,266,714
2006	-25,828,877,327	18,859,503,031
2007	-986,410,466	20,446,027,388
2008	217,186,764	22,603,434,910
2009	-1,214,780,734	22,360,085,966
2010	256,270,044	23,213,905,731
2011	330,443,183	23,685,405,793

Source: (TPC Annual Report, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010 and 2011).

Through analysis trend of RoA, it helped a researcher to know how assets including ICT assets contributed to the performance of TPC. As it was discussed in Chapter three (see, section 3.8.2), the RoA is calculated by: net profit over average total assets, based on the data presented in Table 4.14. Findings of RoA were presented in Table 4.15 whereby the study found that before adoption of ICT in TPC (from year 2002 up to 2006), RoA was 0% because in those periods TPC obtain loss consecutively. Therefore, there were no returns on assets invested to generate profit. In addition to that, the study found that after adoption of ICT in TPC (from year 2007 up to 20011), RoA was 1% in 2008, in 2002 RoA was 0% and in 2011 RoA was 1% as shown in Table 4.15

Table 4.18: TPC Return on Assets

years	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
RoA	0%	0%	0%	0%	0%	0%	1%	0%	1%	1%

4.6 Customer responsiveness towards TPC services in the era of ICT

Findings from the study in Figure 4.2 shows that 34 (66.7%) of respondents used more frequently TPC services while 9 (17.6%) of respondents used very rarely the TPC services. This implies that as far as TPC responds to customer needs customers used more their services regardless of the development of other means of communication.

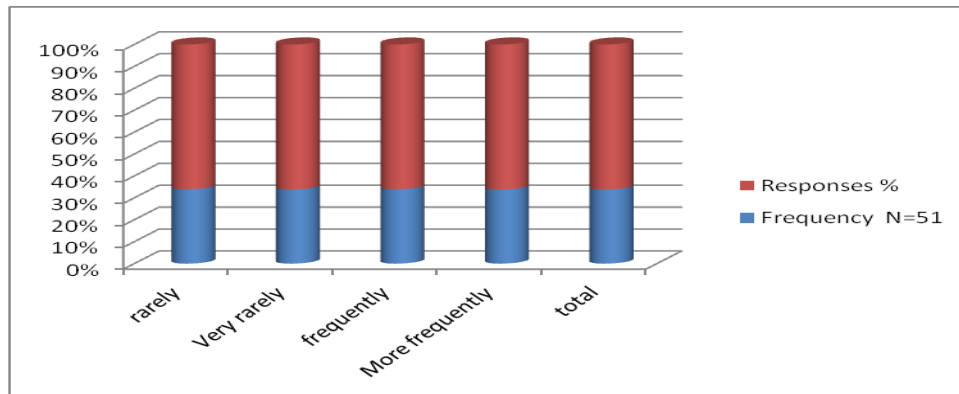


Figure 4.2: Frequency behavior of people using TPC services

Furthermore, the study wanted to know the extent to which posts services were relevant in the era of ICT. Findings from the study in Table 4.16 shows that 16 (40.0%) of respondents said that TPC was dealt with tangible things like parcel while 11 (27.5%) said that it had strong network unlike other telecommunication means. This implies that in spite of development of technology, customers still had expectations in TPC services. As one of respondents said:

“since I was young, I always considered TPC services as reliable service especially when I want to send an important document to some places far away from where I live, things like birth certificate, passport and school certificates and others, I can send them through EMS or registered mail, and I have no doubt that my documents will be safely delivered, but I expect my document to be delivered timely” (Unstructured questionnaire for registered customer in Dodoma Municipality 6th May 2013).

Table 4.19: Importance of post services in the era of ICT

opinions	Frequency N=40	Responses (%)
Post has strong network unlike other telecommunication means	11	27.5
Posts is dealing with tangible things like parcel	16	40.0
Parcel can not be sent electronically	5	12.5
It is a basic service in life	3	7.5
To get in touch with different parts of the world	5	12.5
Total	40	100.0

In addition to that, people view post services especially with mail box services as a geographical identification which can be temporarily or permanent place to find a person or a company. One of respondents said:

“We are failing to provide good services for delivering door to door services due to poor location and identification of a geographical area. Someone may identify a house in a street that it is near a big tree, but at a time when you go there, that tree has been cut so you lose the direction and go back with the parcel in the office” (Interviewee in Dodoma Post Office, 2nd May, 2013).

Hence regardless of the development on other means of communication which are brought by the advancement of ICT; people still perceive post services as important services in life. As one of respondents said:

“without having an identified physical address which identified house, street, region and a country your living, how can some one far away from that place can know where to find you without having meet you before?, hence people need physical address for any kind of communication which involve development issues like school, job, business and faith matters”. (Unstructured questionnaire for registered customer in Dodoma Municipality 6th May 2013)

CHAPTER FIVE

DISCUSSION OF THE FINDINGS

5.1 Introduction

Chapter Four was on presentation of data collected from selected respondents. As it is, such a presentation in the chapter does not give satisfactory answers to research questions unless the answers are analyzed and discussed in detail and a correct conclusion is drawn out of them. Therefore, this chapter discusses the findings based on objectives and in their sequential order as they appear in research specific objectives section.

5.2 The concept of age, gender, education and ICT

In Chapter two, the researcher provided evidence on how factors like age, gender and education level influenced adoption of technology. Based on evidence provided in Section 4.2.4, the study found that, every respondent had its own age category, but majority of respondents were 26 age and above. This implies that, young people who are below 18 years old are so easy to adopt new technologies; as it has been discussed by International Telecommunication Union (2011) and Unwin (2009) in Chapter Two (Section 2.2.6.1)

Furthermore, in the literature review, the researcher found that; men and women may view the same mode of communication differently. The findings reveal that, men still perceive TPC services useful regardless of the method of accessibility unlike women who opt for easy way of communication; as it has been discussed by Venkatesh & Morris, (2000) in Chapter Two (Section 2.2.6.2).

Findings from the study revealed that majority of respondents had attended secondary education. With this level of education it is easy for them to adopt changes brought by ICT in the field of communication. This implies that TPC needs to speed up adoption of technology before many customer shifts to other means of communication. Basing

on empirical review, in ICT research, it is assumed that education is positively related to ICT adoption Hafkin and Taggat (2001) in Chapter Two (Section 2.2.6.3).

5.3 ICT technologies available at TPC

The findings revealed that ICT technologies available at TPC include; computers (See, Section 4.3.1), telephone (See, section 4.3.2) and internet (See, Section 4.3.3). Basing on the findings, with the help of computers, TPC has been able to accomplish many works at a short period of time; these findings agree with those of Studymore (2012) in Chapter Two (refer to Section 2.2.2.1.1) who argued that, Computer has become very important nowadays because it is very much accurate, fast and can accomplish many tasks easily.

The study findings also confirm that, with the use of telephone in TPC operations has helped in bringing close the services to the customers, as it was presented in Chapter Four (See Section 4.3.2). in additional to that, through the use of telephone among TPC staffs, it has influenced time management, easy feed back and reduced operational cost especially with transportation of staffs from one place to another so as to obtain feedback or reporting something. These findings are supported by Unwin (2009) in Chapter Two (See section 2.2.2.1.2) who argues that users of mobile phone can access networks wherever they wanted to.

Basing on the findings, the study found that, through the use of internet, customers can obtain or complain through an email address which is customer.care@posta.co.tz which is connected to all regional post offices in Tanzania. The study indicates that the use of internet does not have a long history in TPC services, as observed in Chapter Two (See, Section 2.4.7) when referring to ICT usage in TPC in this study, the researcher is based on connectivity and internet. With the use of internet people are able to communicate regardless of the distance, as it was observed in Chapter Two (See Section 2.2.2.1.3).

5.4 Efforts to improve product innovation in TPC

The study found that, TPC had tried to put some efforts in innovation so as to improve its services, such efforts include: investing in ICT by buying new computers, computer soft ware's and computer maintenance in counter automation project, as it found in Chapter Four (See Section 4.4.1). This findings corresponding with those of Jean, Sinkovics and Kim (2012) who argued that, the cost of investing ICT may include buying new products, repairing and running cost. Furthermore, the study found that as a method of trying to survive in the market, TPC has engaged on a Community Information Center (CIC) project as a way of automating its services. These findings concur with Post News (2011) see Chapter Two (See, Section 2.4.7). In additional to that, the study found that, TPC using post global system this application contained four modules, namely Point of Sale, Back Office and Management Information System, Domestic Money Transfer and Domestic Track and Trace, as it found in Chapter Two (See, Section 2.4.7). These findings equivalent with the assumption of resource based theory in Chapter Two (see, Section 2.1.1) which assumed that, the unique resources are the main sources of competitive advantage and organization performance. However, whenever people used automated system always there were several implications including: social, economical and technical; it is observed by Automation Federation (1995 – 2013) in Chapter Two (see, Section 2.2.7).

The study has revealed that major duties of ICT personnel in TPC include: create and modify user account, record all system modifications and events in log, be on call to restart the system after panics, crashes and power failures, maintain security of hardware, software and data access, and install new program. In literature review, the study found that in the field of ICT, people who deal with operating systems are called system administrators; as it was observed by Supporting Advancements (2013) in Chapter Two (see Section 2.2.3).

5.5 Performance trend before and after introduction of ICT in TPC services

5.5.1 Type of services used by people

5.5.1.1 Mail and logistics business

In Chapter Four (see Section 4.5.1.1), the study found that in spite of development of other means of communication like; mobile phone and internet, people are still using physical mail, although there have been a decline in mail volume with the advancement of technologies. In Tanzania, the annual growth rate in GDP measures the change in the value of the goods and services produced by the country economy during the period of a year. This findings corresponding with Annual Report of TPC (2010), which reported that, the decline in traditional letter correspondence indicates that many people have resorted to modern means of communications.

5.5.1.2 Financial and agency business

In Chapter Two (see Section 2.4.3.3), the study found that, financial services are concerning with transfer of money from one place to another; it can be within the country or outside the country depending on the service used by the customer. Financial services offered by TPC include: Electronic Money Transfer, Express Money Order (EMO), Postal Orders, Speed Cash (Interstate Money Order), Western Union Money Transfer (WUMT) while agency businesses are those which payments are done on behalf of someone, these include Postal Bank Transactions, and Post Giro services. Furthermore the study found that, majority of respondents' accessed financial services physically, and this has affected the performance of financial services in TPC. These findings agree with those reported by TPC Annual Report of (2011), Financial and agency business are not performing well due to the increase in number of service operators, especially mobile phone companies which are offering financial services. In spite of the mode of financial service provision, the study found that, TPC has a strong and big physical network which covers almost all parts of Tanzania. Hence, TPC calls for partnership with banks to use its networks so that these banks can closely provide their services to the customers through the use of

TPC buildings, and TPC open plots which can be used as a center for cash with draws ATM, as observed in chapter two (see section 2.4.3.3).

5.5.1.3 Courier business

In Chapter Four (see, Section 4.5.1.3), it was found the majorities of respondents using EMS services although the service face a lot of challenges like competitors and poor physical infrastructure. These findings are in line with (Post News 2011, p. 17) which report that apart from government efforts in improving physical infrastructure through Universal Communication Access Fund (UCAFA) where by a project called physical address and postcode will be implemented with the aim at improving economic related activities. This implies that problem of infrastructure in the TPC is long standing problem.

5.5.2 ICTs and their impact on TPC performance

Profitability ratio analysis is an important measurement in assessing ICT contribution in an organization as it is shown in chapter two sections 2.2.5. Basing on the findings in Chapter Four (see Section 4.5.2.1) it shows that the eta squared statistic (0.04) indicates very small effect size. This implies that the impact of ICT in TPC services is insignificance. Probably this result is influenced by the sample size which was based on 14 items studied that were available in the annual report for the period of ten years. Also in chapter four (see, section 4.5.2.2) shows the impact of ICT on Marginal ratio on the TPC profitability, the eta squared statistic (0.001) which indicates negligible effect. The results in eta squared statistic elucidate that, variation of dependent variable is explained by the variation in independent variable as it is explained in Chapter Three (see, Section 3.8.2). As it is, the results on the impact of ICT on the TPC should be taken with caution because data used are based on a ten-year period only i.e. 2002 to 2011. This study has established that there is insignificant impact from ICT on the TPC performance; this has been corroborated by several factors which include: late adoption of ICT softwares and hardware. These findings correspond with diffusion of innovation theory which argued that, innovation is not a

one day process, it is change overtime. The study found that in spite of the fact that TPC started facing the challenges of ICT in early 2000s' but the adoption of electronic systems were implemented in 2007. These findings agree with those of the International Telecommunication Union (2010) which reported that Postal enterprises which are managed in the traditional government mode have generally been late adopters of ICTs. In similar manner, as it presented in Chapter Four (see Section 4.4.2) findings from the study are in line with the Post News (2011, p. 28) which asserts that up to now TPC has got 363 postal offices but only 85 post offices had been automated.

Basing on the findings in Chapter Four (see, Section 4.5.2.3) indicated that RoA before adoption of ICT was 0% because TPC operated in loss from 2002 up to 2006. This findings corresponding with TPC Annual Report (2002) which reported that; it is very challenging for TPC to operate in an open market filled with numerous private enterprises which proving similar and technically more advanced products. In additional to that, since the establishment of TPC, it has always adhered to Universal Service obligation to ensure people access to post network. This has affected revenue of TPC because sometimes it had incurred loss in its operations. For example one of respondents from Dodoma said: *we have closed some of franchised post office like Nkuhungu, also some sub post office is also closed like Chamwino, Kigwe and Hombolo*". But since 2009, TPC has started shift from service provider to business operators. As one of respondents said: *"We have closed other franchise because we were operating in loss, hence we cannot afford to fulfill the universal obligation"*

A part from that, RoA after adoption of ICT shows some improvements since in every asset which TPC was investing, there was a return on 1 percent especially in 2008, 2010 and 2011, although this percentage is very small does not change the fact that there is no association between ICT impacts and performance of TPC services and marginal ratio; and this can support the fact that investment in computers, ICT personnel, telephone and internet not necessarily leads to the increase of profit; these

findings corresponding with (Demopoulos 2008; Ajao 2012; Dix 2007 and Mennati, 2010).

5.5.3 Customer responsiveness towards TPC services in the era of ICT

Basing on the findings from the study in Chapter Four (see Section 4.6) as far as TPC responds to customer needs, customers are more using their services regardless of development of other means of communication. These findings agree with Post News (2011) which reported that the decline in mail does not mean that people are communicating less today than before. Furthermore, findings from the study shows that the post code project was inaugurated in 2010 at Arusha City, where by several regions have been selected for pilot projects such as Dodoma, Arusha, Mbeya and Morogoro. This project will enable people to have an identified and registered address so that it will be easy to trace a person, as observed in Chapter Two (see, Section 2.4.7)

CHAPTER SIX

SUMMARY, CONCLUSIONS AND POLICY IMPLICATIONS

6.1 Overview

This chapter presents the summary of the findings, conclusions, policy implications and ends by pointing out direction for further research.

6.2 Summary

This study aimed at exploring the impact of Information Communication Technology (ICT) on performance of Tanzania Posts Corporation (TPC). The study focused on examining ICT technologies available at TPC, assessing efforts used to improve product innovation in TPC, assessing performance trends before and after introduction of ICT in TPC and explored customer responsiveness towards TPC services in the era of ICT.

In general, the study provided empirical explanations on ICT impact and organization performance in Tanzania.

The study adopted a case study research design to attain its objectives. The target population of the study were household which were registered to mail service of TPC, TPC staffs from Dodoma Municipality, Mbeya urban district and Ilala Municipality in Dar es Salaam, non registered customers of TPC, and public and private Institutions like schools, companies and industries. The sample size for the study was 62 respondents; purposive sampling technique was used while questionnaires, interviews, observation and documentary review were used in data collection. The Statistical Package for Social Sciences (SPSS) and Excel software were used in analysis while data from in depth interviews were analyzed qualitatively. Data were presented in Tables, figures and text forms. A number of measures were taken to ensure validity and reliability of the data.

6.3 Conclusion

Based on research questions and hence specific objectives of the study, the following conclusions are made:

(a) Examining ICT technologies available at TPC

The study has revealed that external factors such as competitors, customers and suppliers are reasons which influence TPC to adopt ICT in its operation as it was found by Koelling 2008 in Mennati 2010. Hence, the usage of computer, telephone and internet in TPC has become part and parcel of operations. This has helped in keeping record, enable trace and tracking systems; also it has simplified and sped up work through the use of computers, telephone and internet.

(b) Assessing efforts used to improve product innovation in TPC

TPC has incurred costs in investing in ICT so as to enable the smooth operations of activities whereby employees have been given training concerning introduction to computer and the use of post global system. Also the management incurred cost of sending people to school, buying new computers and repairmen of ICT facilities. For example, since 2007, 2008, 2009 and 2010; TPC has incurred the following costs for computer maintenance, 40,066,674; 54,085,488; 55,774,811 and 65,893,231 respectively.

(c) Assessing performance trend before and after introducing ICT in TPC services

Profitability ratio analysis is an important measurement in assessing ICT contribution in an organization. This study has shown that the eta squared statistic (0.04) which indicates very small effect size. This implies that the impact of ICT in TPC services is insignificance. Also findings show that the impact of ICT on Marginal ratio on TPC is insignificance, the eta squared statistic (0.001) which indicates negligible effect. Also, findings indicate that RoA before adoption of ICT was 0% because TPC operated in loss from 2002 up to 2006. RoA after adoption of ICT shows some

improvements since in every asset which TPC has invested there is a return on 1 percent especially in 2008, 2010 and 2011. The study concludes that the performance of TPC is affected by other factors rather than ICT factors studied in this study. Hence the study has revealed that there is a statistically insignificant increase in performance before adoption of ICT and after adoption of ICT.

(d) Explore customer responsiveness towards TPC services in the era of ICT.

In the era of ICT firm competes for customers, products and ICT personnel, hence the study reveals that, in spite of development of other forms of communication TPC services are still important in the era of ICT. Findings from the study shows that 16 (40.0%) of respondents said that TPC deals with tangible things like parcel while 11 (27.5%) said that, TPC has strong network unlike other telecommunication means.

6.4 Policy implications

- i. Government must keep in mind that in a market economy a firm must compete for resources in order to survive in the market a firm needs to make profit. TPC is owned by the government; this does not mean it needs to operate its services at loss as found in this study that in 2002 up to 2006 TPC operated at loss (see Chapter Four Section 4.5.2); however, the government can help TPC to accomplish the major obligations of universal postal services to all people by improving physical infrastructure such as roads and vehicles for transporting mails and parcels to ensure efficiency in TPC operations. This will help TPC to survive in the market economy because government ministries will use TPC services and this will contribute to its growth.
- ii. TPC is mandated to provide comprehensive and efficient universal postal services that meet the industrial, commercial, social and household needs of the nation. Therefore, people have the right to complain and/or suggest on her services for improving her performance rather than moving to other operators whose services

are costly and their network is not as big as TPC. Apart from other objectives, TPC discharges the obligation of providing universal postal services at uniform and affordable prices countrywide and this condition gives the corporation a challenging task of keeping the overall operations at minimum cost levels without compromising the quality of its products and services (see Chapter Two Section 2.4.6).

- iii. The findings of this study have demonstrated that young people tend to adopt quickly new technology compared to old people. The policy implication of this is that any development intervention must consider the interests of each group especially when it comes to ICT development since the impact of ICT is not the same to every age group.
- iv. Similarly, the findings of this study demonstrated that the adoption of ICT has a direct link with education of the user. Since educated people are easy to learn and adopt technology and become user friendly unlike to uneducated people. The policy implication here is that, there is need for integrating educational issues with ICT development since the speed on diffusion of technology depends on number of adopters.
- v. Basing on the findings, it has been revealed that policy reforms may contribute to the underperformance of organization if it has overlooked some important consequences. For example, since 1993, TPC has liabilities which it inherited from Tanzania Posts and Telecommunications Company (TP &TC). During policy reform in 1993 the government promised to recapitalize the corporation and taking over agreed liabilities, but up to 2010 the government did not do so.
- vi. The study reveals that TPC is a hidden treasure in spite of the fact that it has lost its victorious glory. TPC has got lots of good and relevant services in affordable price. The major problem is lack of advertisements and employees of TPC should stop operating their activities as normal; they need to know things have changed

and they need to change and upgrade their services. TPC is no longer a big tiger in the forest as it was in 1990's, with the development of ICT, TPC performance has been shaken, hence but not bitten. Then it should speed up the adoption of ICT.

6.5 Contribution of the study

The contribution of this study to literature and knowledge is as follows: first, very little seems to have been studied on the impact of ICT on organization performance in Tanzania; this study has done that. Second, the study has shown that there is insignificant relationship between ICT adoption and performance of TPC. Due to several reasons, therefore the study reveals the gap of knowledge on what criteria a firm needs to consider before adopting ICT. However studies have confirmed that, in short term when firms invest in ICT may incur a lot of costs and loss, but in a long run a firm may start to enjoy economies of scale.

6.6 Areas for further research

Further research should be conducted to determine the effect of ICT on performance of TPC by attributing to further indicators like ICT index which measures ICT usage. Moreover, further researcher may develop the same concept of ICT's impact on TPC based on quarterly report so as to come up with larger sample size.

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APPENDICES

APPENDIX 1

QUESTIONNAIRE FOR TPCREGISTERED CUSTOMER (BOTH PUBLIC AND PRIVATE ORGANIZATION)

I. RESPONDENTS CHARACTERISTICS

1. Name of organization
- 2 Name of respondent
3. Region
4. Municipality
01=Mbeya municipal () 02=Ilala municipal () 03= Dodoma municipal ().
5. Sex: 01= Male () 02= Female ()
6. Age of respondents
01= below 18 years () 03= 26-35 years () 05= above 45 years ()
02= 18-25 years () 04= 36-45 years ()
7. Education level
01= Non formal education () 03= Secondary education ()
02= Primary education () 04= Post secondary education ()
8. Marital status
01= Single () 03= Divorce () 04= Separated ()
02= Married () 05=Widower ()
9. Occupation
01= Farmer () 02= Employed ()
03= Business () 04= Others ()

II. KEY INFORMATION

1. Mention type of TPC service you're using
2. How many times you have used TPC services?
1=rarely () 3= frequently ()
2= Very rarely () 4= more frequently ()
3. How do you access TPC services?
1= physically () 2= electronically ()
4. Are you satisfied with TPC services?
5. 1= Yes () 2= No ()
6. If yes, Why
7. If no why?
8. When did you register your self for mail box service?
.....
9. Why did you decide to register for mail box service?
10. In this era of development of ICT do you think it is important for some one to register him / her self for mail box service?
11. 1= yes () 2= no ()
12. If yes why
13. If no, why
14. Do you pay yearly fee for owning mail box?
1= yes () 2= No ()
15. What type of letter are you using the most?
1= friendly letters () 2= official letters () 3= both ()
16. Is there any seasons which you're mostly sending letters?
1=yes () 2=No ()
17. If yes, when and why?
18. What are you're suggestions towards TPC in regarding to the era of modern ICT?

APPENDIX II

QUESTIONNAIRE FOR TPC NON REGISTERED CUSTOMER

I. RESPONDENTS CHARACTERISTICS

1. Name of respondent
2. Region
01=Mbeya municipal () 02=Ilala municipal () 03= Dodoma municipal ()
3. Sex 01= Male () 02= Female ()
4. Age of respondents
01= below 18 years () 03= 26-35 years () 05= above 45 years ()
02= 18-25 years () 04= 36-45 years ()
6. Education level
01= Non formal education () 03= Secondary education ()
02= Primary education () 04= Post secondary education ()
7. Marital status
01= Single () 03= Divorce () 04= Separated ()
02= Married () 05=Widower ()
8. Occupation
01= Farmer () 02= Employed ()
03= Business () 04= Others ()

II. KEY INFORMATION

1. Mention type of TPC service you're using
2. Are you using TPC services for which purpose?
1= personally () 2= officially () 3= both ()
3. How many times you have used TPC services?
1=rarely () 3= frequently ()
2= Very rarely () 4= more frequently ()
4. How do you access TPC services?
1=physically () 2= electronically ()

5. Are you satisfied with TPC services?
1= Yes () 2=No ()
6. If yes, Why
7. If no why?
8. Do you have any plans to register your self in using mail box service?
1=Yes () 2 = No ()
9. If yes, why
10. If no, why
11. Are there any problems your facing using TPC services as a non registered customer?
1= yes () 2= No ()
12. If yes, mention them
13. What are your suggestions towards TPC services?

APPENDIX III

QUESTIONNAIRE FOR TPCREGISTERED CUSTOMER

I. RESPONDENTS CHARACTERISTICS

1. Name of respondent
2. Region
3. Municipality
01=Mbeya municipal () 02=Ilala municipal () 03= Dodoma municipal ().
4. Sex: 01= Male () 02= Female ()
5. Age of respondents
01= below 18 years () 03= 26-35 years () 04= 36-45 years ()
02= 18-25 years () 05= above 45 years ()
6. Education level
01= Non formal education () 03= Secondary education ()
02= Primary education () 04= Post secondary education ()
7. Marital status
01= Single () 03= Divorce () 04= Separated ()
02= Married () 05=Widower ()
8. Occupation
01= Farmer () 02= Employed ()
03= Business () 04= Others ()

II. KEY INFORMATION

1. Mention type of TPC service you're using
2. Are you using TPC services for which purpose?
1= personally () 2= officially () 3= both ()

3. How many times you have used TPC services?
1=rarely () 3= frequently ()
2= Very rarely () 4= more frequently ()
4. How do you access TPC services?
1= physically () 2= electronically ()
5. How many kilometers do you work in order to access TPC services?
6. Are you satisfied with TPC services?
1= Yes () 2= No ()
7. If yes, Why?
8. If no why?
9. When did you register your self for mail box service?
10. Why did you decide to register for mail box service?
11. In this era of development of ICT do you think it is important for some one to register hi/her self for mail box service?
1= yes () 2= no ()
12. If yes why If no, why
13. Do you pay yearly fee for owning mail box?
1= yes () 2= No ()
14. If yes, when was your last time to pay for mail box fee? If no, why
15. What type of letter are you using the most?
1= friendly letters () 2= official letters ()
16. Is there any seasons which you're mostly sending letters?
1=yes () 2=No ()
17. If yes, when and why?
18. What are you're suggestions towards TPC in regarding to the era of modern ICT?

APPENDIX IV (A)

Questionnaire for TPC staff from Mails and logistic Business

Part One: Respondent's Profile:

Name

Department

Position

Age

Education:.....

Years of work at TPC.....

Part two: key information

1. What is the profit of mail trend before the introduction of modern ICT in TPC?
2. What is the loss of mail trend before the introduction of modern ICT in TPC?
3. Can you please explain the mail volume trend before the introduction of modern ICT?
4. Can you please explain the mail volume trend after the introduction of modern ICT?
5. How many days or hours does mail take to reach the sender across regional and countries?
6. Do people still register themselves for mail box services?
7. What was the situation of customer registration before the development of modern ICT?
8. What is the situation of customer registration after the development of modern ICT?
9. According to your views and experiences in working in TPC, how do you categorizing the performance of mail services? Explain
10. Are there any variations of income depending on season's variations?
11. Do you think people are satisfied with your services?
12. How do customers access TPC services? Explain
13. In TPC operations are you using any ICT infrastructures?

14. Explain in which services and since when you have started using ICT infrastructures
15. If no why?
16. Do you find any difficulties in using ICT infrastructures in your operations?
17. For your experience, what is the contribution of modern ICT towards your operations?
18. How many ICT staff does your department have?
19. Explain briefly their ability in solving computers problems?
20. Do management decisions prioritize modernization of TPC services? Explain
21. What challenges do you face in using ICT facilities to your operations?
22. Do you have any competitors who provide the same services to the people? Explain
23. explains who and which type of services did he/she offers?
24. Explain how do you couple with competition?
25. Does modern ICT have any contribution in solving the challenges you're facing?
26. If no why?
27. What are the marketing strategies measures, towards improving of mail services?
28. Do you have any plans of changing the mode of service deliverance to the customer?
29. In you're opinions, what can TPC do in order to survive in this era of modern ICT?

APPENDIX IV (B)

Questionnaire for TPC staff (courier and express business)

Part One: Respondent's Profile:

Name

Department

Position

Age

Education level:

Years of work at TPC.....

Part two: key information

1. What is the profit of EMS trend before the introduction of modern ICT in TPC?
2. What is the loss of EMS trend before the introduction of modern ICT in TPC?
3. Can you please explain the EMS volume trend before the introduction of modern ICT?
4. Can you please explain the EMS volume trend after the introduction of modern ICT?
5. How many days or hours does parcel and documents take to reach the sender across regional and countries?
6. Do people need to be registered for EMS services?
7. What was the situation of customer registration before the development of modern ICT?
8. What is the situation of customer registration after the development of modern ICT?
9. Who are the users of EMS services?
10. According to your views and experiences in working in TPC, how do you categorizing the performance of EMS services?
11. Are there any variations of income depending on season?
12. Do you think people are satisfied with your services?
13. How do customers access EMS services?

14. In EMS operations are you using computers?
15. When did you start using computer? And how do you using computer?
16. Do you using internet in your operations?
17. Which changes you have notice since you started using computer and internet?
18. Since you have started using computers and internet, are there any services which have been eliminated?
19. Do you find any difficulties in using computer in your operations?
20. How many times you have attended ICT training regarding to your operations?
21. Do you have any competitors who provide the same services to the people?
22. Explain how do you couple with competition?
23. How does management responds to the challenges you have mentioned?
24. Does modern ICT have any contribution in solving the challenges you're facing?
25. In your opinions, what is the cause of the challenges you have mentioned?
26. What are the marketing strategies measures, towards improving of EMS services?
27. Do you have any plans of changing the mode of service deliverance to the customer?
28. In you're opinions, what can EMS do in order to survive in this era of modern ICT?

APPENDIX IV (C)

Questionnaire for TPC staff (financial and agency business)

Part One: Respondent's Profile:

Name

Department

Position

Age

Education level:

Years of work at TPC.....

Part two: key information

1. What is the profit of financial and agency business trend before the introduction of modern ICT in TPC?
2. What is the loss of financial and agency business trend before the introduction of modern ICT in TPC?
3. How many days or hours does money take to reach the destination across regional and countries?
4. Do people need to be registered for financial and agency business services?
5. Who are the users of financial and agency business services?
6. According to your views and experiences in working in TPC, how do you categorizing the performance of financial and agency business services?
7. Are there any variations of income depending on season?
8. Do you think people are satisfied with your services?
9. How do customers access financial and agency business services? Explain.
10. In financial and agency business operations are you using computers?
11. When did you start using computer? And how do you using computer?
12. Do you using internet in your operations?
13. Which changes you have notice since you started using computer and internet?

14. Since you have started using computers and internet, are there any services which have been eliminated?
15. Do you find any difficulties in using computer in your operations? Explain.
16. How many times you have attended ICT training regarding to your operations?
17. What challenges do you face in using computer to your operations?
18. How does management responds to the challenges you have mentioned?
19. Do you have any competitors who provide the same services to the people?
20. Explains who and which type of services they offer?
21. Explain how do you couple with competition?
22. Does ICT have any contribution in solving the challenges you're facing?
23. In your opinions, what is the cause of the challenges you have mentioned?
24. What are the marketing strategies measures, towards improving of financial and agency business services?
25. Do you have any plans of changing the mode of service deliverance to the customer?
26. In you're opinions, what can financial and agency business do in order to survive in this era of modern ICT?

APPENDIX IV (D)

Questionnaire for TPC staff (ICT staff)

Part One: Respondent's Profile:

Name

Position

Age

Education level:

Years of work at TPC.....

Part two: Key information

1. When did TPC started to experience the challenges brought by development of modern ICT?
2. How many ICT staff are you in TPC?
3. Explain briefly your ability in solving computers problems?
4. Mention the challenges they face in implementing your activities
5. Is there a problem of power going on and off?
6. Does TPC have a generator?
7. Does TPC have enough computers for its operations?
8. Did all the departments and sections complete automating their data?
9. Are there services which are still provided manually?
10. Do you have any plans of changing the mode of service deliverance to the customer?
11. Do you think the ICT-TPC policy content is relevant to the current situation?
12. In you're opinions, what can TPC do in order to survive in this era of modern ICT?

APPENDIX IV (E)

Questionnaire for TPC staff (Regional branch Manager)

Part One: Respondent's Profile:

Name

Position

Age

Education level:


Years of work at TPC.....

Part two: Key information

1. How many sub post offices are there in the study area?
3. When did TPC started to experience the challenges brought by development of modern ICT?
4. How many ICT staff does your organization have?
5. Explain briefly their ability in solving computers problems?
10. Are there plans to recruit more ICT staff?
12. Mention the challenges they face in implementing their activities
13. Is there a problem of power going on and off?
14. Does TPC have a generator?
15. Does TPC have enough computers for its operations?
16. Did all the departments and sections complete automating their data?
19. Are there services which are still provided manually?
22. What are the marketing strategies measures, towards improving of TPC services?
23. Do you have any plans of changing the mode of service deliverance to the customer?
4. Do you think the ICT-TPC policy content is relevant to the current situation?
27. In your opinion, what can TPC do in order to survive in this era of modern ICT?

APPENDIX V (A)

SHRO
Mjuzi Mwanafunzi huyu
ili aendelee na utafiti wake
Dodoma 14/3/2013



SHIRIKA LA POSTA TANZANIA

WARAKA WA NDANI

Kumbi Yako: MHR/DF.6203/2013
Tarehe: 8 MACHI, 2013

Kutoka: M/RASILIMALI WATU
Kwenda: RM/DODOMA


YAH: **FIELD ATTACHMENT YA LYNNCHRISTINE GREGORY ISOTE**

Somo hilo hapo juu lahusika.

Tunakiri kupokea barua yako ya tarehe 25 Februari, 2013 ya mwanachuo wa Masters katika chuo cha Mzumbe na Research Proposal.

Kibali kimetolewa cha kukusanya data, kwa mwanafunzi huyo katika mkoa wako wa Dodoma, Mbeya na D'Salaam. Aidha, atatakiwa kuleta kwenye shirika nakala moja ya mwisho ya utafiti wake.

J.J. Lukonge
J.J. LUKONGE
MKURUGENZI MKUU RASILIMALI ZA SHIRIKA



APPENDIX V(B)



SHIRIKA LA POSTA TANZANIA

OFISI YA MENEJA WA MKOA DODOMA
SIMU NA.026-2322265, FAX NA.026-2322677

Tarehe: 25 April, 2013

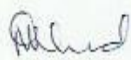
Lyncristine Isota,
P.O BOX ,
DODOMA.

YAH:KUFANYA RESEARCH KATIKA OFISI ZA POSTA

Kichwa cha habari chausika.

Napenda kukutaarifu kwamba umekubaliwa kufanya research katika ofisi za
Posta kama ulivyoomba.

Nakutakia mafanikio mema.


M.M.YOMI
MENEJA WA MKOA
POSTA DODOMA



APPENDIX V(C)



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MOROGORO, TANZANIA

Ref.No. MU/DRPS/PGS/MSC/DP/MZC/013/T.11

Date: 2nd May, 2013

TO WHOM IT MAY CONCERN

RE: INTRODUCTION OF MS. LYNNCHRISTINE GREGORY ISOTE

The bearer of this letter is a Postgraduate student of Mzumbe University pursuing Msc. (Development Policy). As part of requirements for completion of her studies, she is collecting information on *"The Impact of Modern Information Communication Technology –ICT on Tanzania Posts Corporation."*

This letter serves to achieve three purposes. Firstly, to verify that she is granted permission to undertake the research, secondly, to introduce her to you and thirdly to request you to facilitate any form of assistance she might need. We can assure you that this activity is entirely for academic purposes.

We trust that you will accord our student with necessary assistance.

Sincerely yours,

Dominick Msabila
For: VICE CHANCELLOR