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## Factors Affecting Utilization of ICT in Public Organizations: A Case of Narok North District Headquarter- Kenya

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### **Abstract:**

*This study sought to establish the factors affecting the utilization of information communication technology- ICT in public organizations in Kenya. The study specifically sought to establish the effect of training of staff, cost of equipment, government policy, and organizational culture on the utilization of ICT in public organizations. The conceptual framework of the study was guided by the research objectives and literature review. The study was descriptive in nature using qualitative techniques. The target population was 234 staff composed of 24 heads of department, 30 supervisors, 120 operational workers and 60 support staff of the public service in Narok North district headquarters. A sample size of 70 representing 30% of the staff population selected using stratified random sampling and all of them were used in the study. Validation on the instruments was done by the supervisor and reliability was done through test re-test method on public service offices at Narok South district. The sample of respondents used in the pre-test was 7 (10%) of the selected sample size of 70 respondents and was not included in the final study. Data was collected by use of questionnaires which were self-administered. The data was arranged, coded, then analyzed using frequency tables and percentages and presented in tables, pie charts and bar charts. From the results the study concluded that the factors affecting the utilization of ICT in public organizations are related to training, cost, government policy and organizational culture among others. From the demographic profile the results show that the respondents are gender balanced, majority of the officers are at the peak of their productive age bracket, well experienced, and most of them are post-secondary graduates. The researcher recommended that the government should promote ICT in education at all levels by developing ICT curricular and ensuring trainer possess the requisite skills, support software development with local content, and create awareness on the benefits of ICT to the public and put up knowledge sharing centers like the Digital Village Initiative. A similar study targeting the private sector can be carried out for comparison and validation of the factors and another one on the effects of ICT on poverty alleviation. The study is expected to benefit employees of the public service of Kenya and organizations who embrace ICT and the advantages that come with it.*

**Keywords:** ICT, Training, Organizational Culture and policy

## 1. Introduction

### 1.1. Background Information of the Study

Globalization and technological change processes that have accelerated in tandem over the past fifteen years have created a new global economy “powered by technology, fueled by information and driven by knowledge” Therefore Organizations must continuously change due to ongoing changes in the environment (Samson & Daft, 2010). Information and communication technologies (ICTs) which include radio and television, as well as newer digital technologies such as computers and the internet have been touted as potential powerful enabling tools for educational change and reform. Developments in ICT such as the World Wide Web (WWW), Electronic Data Interchange (EDI), video-conferencing, teleconferencing, teletext, videotext, value added services (VAS) and electronic mail (email) can be seen as enablers to cross organizational boundaries more easily when dealing with information intensive processes.

Business process reengineering- BPR is an approach that firms take to re-optimize business processes for the purpose of obtaining competitive advantages and enhancing business performance, such as costs saving, quality breakthrough, better customer services, time reduction, and revenue increases (Brandon& Morris, 1993).

Many experts (Akavan, Jafari& Ali-Ahmadi, 2006), agree that ICTs could facilitate firms to gather and analyze information, develop strategic visions, allow collaborative teamwork, and find the best approach for business process redesign. Firms sometimes need to change the organizational structure or align with the adopted ICTs to obtain positive business performance and better operational efficiency (Samson & Daft, 2010). A first business trend is the use of information and communication technology (ICT) to reduce costs and increase capabilities (Morton, 1996). From the early efforts to support existing inter-organizational processes (for example the ex-change of documents between organizations), the focus has shifted to the emergence of new ways of doing business. Examples of this include the introduction of electronic trading markets, electronic auctions, and electronic bookstores. ICT has developed from a minor force supporting the inter-organizational processes into a dominant force for shaping these processes.

According to International Telecommunication Union (ITU) mobile communications and technology has emerged as the primary technology that will bridge in the least developed countries. Moreover, the data from ITU's Measuring the Information Society 2011 report shows that mobile devices are replacing computer and laptops in accessing the internet. Countries in Africa have also recorded growth in using mobile phones to access the internet. In Nigeria, for example, 77% of individuals aged 16 and above use phones to access the internet as compared to a mere 13% who use computers to go online.

These developments and growth in mobile communication and its penetration in developing countries are expected to bridge the digital divide between least developed countries although there are still challenges in making these services affordable. In 2003, the World Summit on the Information Society (WSIS) held in Geneva, Switzerland came up with the following observations: Projects which deploy technologies in underdeveloped areas face well-known problems concerning crime, problems of adjustment to social context, and also possibly infrastructural problems. The expansion of ICT can have direct outcomes. Expenditure on ICT has been known to cause intra-household conflict, foster male dominance over resources and divert household resources away from food and other essentials. Human right concerns such as child labour have also been raised over use of conflict materials in the production of ICT devices.

In many impoverished regions of the world, legislative and political measures are required to facilitate or enable application of ICTs, especially with respect to monopolistic communications structures and censorship laws. The literacy issue is one of the key factors why projects fail in rural areas; as education in literacy sets the foundation for digital and information literacy, proper education and training are required to make the user at least understand how to manipulate the applications to get the information they need.

	1998	2000
United States	26.30	54.3
High Income OECD (excluding the U. S	6.90	28.2
Latin America and the Caribbean	0.80	3.2
East Asia and the Pacific	0.50	2.3
Eastern Europe and CIS	0.80	3.2
Arab States	0.20	0.6
Sub Saharan Africa	0.10	0.4
South Asia	0.04	0.4
World	2.40	6.7

*Table 1: Internet Users as Percentage of Total Population*

*Source: United Nations Development Program, World Development Report 2001*

Africa's greatest success story to date in telecommunications is the remarkable spread of mobile telephony. Africa's mobile market has been the fastest growing of any region over the last five years, and has grown twice as fast as the global market. It has been a significant contributor to expanding access opportunities to a vast majority of its population.

Under Vision 2030, Kenya is positioning itself to tap into the ICT sector strategy to become a middle income country by 2030. This has started with steps to bridge the digital divide, by lowering telecommunications costs and setting up of infrastructure.

The government has also identified specific areas of attention, developed and is implementing policy and regulation to attract new investments and to catapult the country's vision of becoming a regional technology hub. ICT is also viewed to be a major contributor to attaining the target of a 10 per cent GDP growth rate by 2012, from the current 4.4 per cent. Business process Outsourcing (BPOs) has been identified as the flagship project for ICT. BPO is targeted at increasing its contribution to the country's GDP in the medium term by KShs.25.5 billion (300\$ million), while creating more than 7,500 jobs for young professionals.).

Kessy, Kaemba, and Gachoka, (2006) and Ford, (2007) discuss several reasons for under use of ICT in education in the African context. The cost of adopting ICT including acquiring hardware and software, setting up telecommunication networks, and the maintenance and repair of facilities is often prohibitive for developing nations. In general, African countries have poor infrastructure including unreliable transportation, limited electricity supply, broadcast and telecommunication facilities.

To be effectively adopted, ICT requires good governance and appropriation of allocated government funds and foreign aid. In many developing nations lack of ICT policy, poor ICT project management, and corruption has led to ineffective implementation, adoption of different systems and standards, duplication of effort, and waste of technology resources (Adomi, 2005).

Fourie and Alt (2002) further state that the cultural context of ICT adoption, language barriers, and attitude towards ICT affect the rate of adoption. Perceived difficulty in the integration of ICT in education is based on the belief that technology use is challenging, its implementation requires extra time, technology skills are difficult to learn, and the cost of attaining and maintaining resources is prohibitive. The focus of this study was on the factors affecting the utilization of ICT in public organizations.

### *1.2. Statement of the Problem*

Nwagu, (2006) show that the adoption of ICTs may improve general financial performance, reduce functional area costs through business process outsourcing, customer relationship management (CRM), supply chain management (SCM) and quality services. The impact of ICT uses may depend on national culture and in the specific environment in which it is embedded (Martin&Nakayana, 2000). Based on the rich body of research on Business Process Reengineering- (BPR) and the diffusion of ICTs survey results indicate that organizational innovation, market pressure and competitive intensity positively affect information technology adoption, which in turn trigger changes or business process in terms of workplace, workforce and business structure ( Lee et al., (2009) .The utilization of ICT in enhancing performance in the public service is still underutilized by most of the government departments in Kenya (Ford, 2007;Kessy et al., 2006). This observation shows that there is a gap in knowledge about utilization of ICT in public organizations. Therefore, it was reasonable to suggest research questions to address the course of this research namely: what are the factors affecting the utilization of information communication technology- ICT in the public sector in Kenya?

### *1.3. Objectives of the Study*

The general objective of this study was to establish the factors affecting the utilization of ICT in public organizations in Kenya.

### *1.4. Specific Objectives*

1. To establish the effect of training of staff on utilization of ICT in public organizations
2. To find out how cost of equipment affects the utilization of ICT in public organizations.
3. To determine how government policies affects utilization of ICT in public organizations
4. To determine how organizational culture affects the utilization of ICT in public organizations

### *1.5. Research Questions*

1. How does training of staff affect the utilization of ICT in public organizations?
2. How does cost of equipment affect the utilization of ICT in public organizations?
3. How do government policies affect the utilization of ICT in public organizations?
4. How does organizational culture affect utilization of ICT in public organizations?

### *1.6. Significance of this Research*

The role of this research was to fill the gap of utilization of information communication technology systems influence on the organizational performance thoroughly and comprehensively in this field of research, which is yet to be significantly addressed in academic literature. Importantly the outcome of this research will throw light to other researchers on the relationship between organizational performance and field of research and the extent of existing discourse on this subject. In addition, findings from this research will serve as the springboard on which further research on the relationship between information communication technology systems and inter-organizational coordination will emerge. The knowledge that will be generated from this study will assist other organizations on how to effectively adopt information communication technology systems in their organizations for performance improvement.

### *1.7. Limitations of the Study*

This study was likely to be limited in literature on governmental organizations in Kenya relating to performance and inter-organizational coordination: therefore, there was over reliance on the literature from other developed countries to counter this problem. This study was also limited in the accuracy of the data collected using the questionnaire as there was no way the accuracy could be determined. However, the researcher had the confidence that the respondents were faithful enough to give accurate information. Non response was another most likely limitation from the respondents. However, the researcher requested the heads of department (HOD) to oversee the filling of the questionnaires.

### *1.8. Scope of the Study*

This study focused on the factors affecting the utilization of ICT in the public organizations: Narok North District Headquarter offices. It was restricted to establishing how inter-organization coordination is facilitated by ICT utilization to bring about higher performance. It was carried out between the month of July and August, 2014

## **2. Literature Review**

### *2.1. Training of Staff*

Training is the act of increasing the knowledge and skills of an employee for doing a particular job while development is growth of the individual in all aspects (Cole, 2006). To him the purpose is to bring a change to the behavior of the employee and accomplishment of the fundamental objectives through positive change in knowledge, skills and attitude of employees, thus improving the quality and quantity of work. Training offers several benefits to the organization which include; better performance as the quality and quantity of the work is high when the workers are trained or given proper training, training teaches workers to make the most economical and best use of materials and equipment, the cost of production can be reduced, the supervisor can increase his span of management because trained employees need less supervision, the availability of trained personnel ensures long-term stability and flexibility in the

organization, training instills confidence to workers that they are being cared for and this will improve relationship between employees and employers with the help of training, the best methods of performing work can be standardized and made available to all employees.

Human resources are the most dynamic of all organization's resources and they need considerable attention from the organization's management. If they are to realize their full potential in their work, training and development is an issue which has to be faced by the management today. Thus the training refers to specific skills; it is narrower in conception than either education or development, it is job oriented rather than personal and development, this usually suggests a broader view of knowledge and skills acquisition than development, it is less job oriented and carrier oriented, it is concerned more with employee potential than with immediate skills, it sees employees as adaptable resource (Sagimo, 2002)

According to (Cole, 2003) he also identifies a basic training cycle that an organization can follow when carrying out the training. Training and development as planned process to modify attitude, knowledge and skills through learning experiences to achieve effective performance. He argued that the purpose of training in the work is to develop the abilities of an individual and satisfy the current and future needs of the organization.

Haag, (2005) wrote that the purpose of training is to improve employees' performance in their current job and or equip them for more demanding roles or a change in their role in the future. He also argued that training is expensive in that special instructors may have to be employed, external course must be financed, and internal courses require resourcing with materials, personnel and physical facilities. Training benefits both the organization and the individual worker in the following ways which include; productivity and quality of work improve and develop the knowledge, skills and attitudes of employees and the organization need not to fear the consequences of new technology.

There are two broad training programs which can be identified; on- job training that take place in the work setting as employees perform their tasks and has techniques such as orientation, delegation, promotion and transfer, refresher, vestibule and job rotation training. And off the-job programs which are formal management training programs and techniques used include; lectures, conferences, case studies, role playing, management games, sensitivity training, assertiveness training and transactional analysis (Brawley, 2005)

Training offers the following benefits to workers, it helps employees to advance in their careers as it provides new knowledge and skills, helps to improve the performance of workers because of this the workers can earn higher wages and bonus, trained employees are less prone to accidents as they know how to use various safety devices, trained employees should have greater job satisfaction as they know their job and this helps to increase morale, opportunity for promotion and trained workers can move from one job to the another or even from one organization to another advancing their career (Bee, 2007)

A 2010 research report from the Governance and Social Development Resource Centre in Geneva found out that the literacy issue is one of the key factors why projects fail in rural areas; as education in literacy sets the foundation for digital and information literacy, proper education and training are needed to make the user at least understand how to manipulate the application to get the information they need. Constant follow up with the community is needed to monitor if the project has been successfully implemented and is being used meaningfully.

E-Learning: "More Africans learn by mobile phone" The e-Learning Africa 2011 conference highlighted the worldwide phenomenon of distance learning by mobile phone. There are more than 500 million mobile phone subscribers in Africa now, up from 246 million in 2008, according to industry estimates. Gerald Henzinger, a lecturer at the Catholic University of Mozambique, said students are rushing to use mobile phone learning. "The only challenge is that logistics do not match the exponential growth of students' demand. "Mobile learning at our Distance e-Learning Center (DEC) focuses on SMS. Our students often are school teachers in very remote areas who have restricted or no access to electricity and the Internet. We use bulk SMS – short messages that can be sent to many students at the same time – as well as interactive SMS services. These help students communicate with our staff about the subject matter or on administrative issues." Dr Niall Winters of the London Knowledge Laboratory said the development of mobile phone learning in Africa is being encouraged by a huge demand for distance education. The eLearning Africa News Portal disseminates information about rich learning opportunities in conjunction with technologies, such as computers, the Internet, mobile devices, radio and audiovisual media in Africa. It is a hub for sharing ideas and best practices in the field of Information and Communication Technology as a tool for development (ICT4D) and education (ICT4E) across Africa

The need to supply an ICT literate workforce is anchored on the Information Age wherein the global economy's primary commodity is now information. Labour-intensive production has become knowledge-intensive, thus, the ever growing need for information workers. Corporate businesses that need information workers thrive on ICT. They do not only own the technology, but they also exert power through it. This results in a parasitic and predatory relationship between those who own the technology and their labour and consumer market. ICT, in the context of global capitalism is therefore being used to advance private corporate interests towards what Schiller (as cited in Waller, 2007) calls a "corporate controlled information society" This restructuring of the global economy through ICT has implications that affect us immensely, even more so with the inclusion of ICT in education. It reinforces the exploitative nature of capitalism for it allows business interests to enter into and control our educational system.

To exert its economic power in the global economy and "justify the more aggressive drive of the Transnational Corporations in the global order," capitalist-led WB and the World Trade Organization has put forth the theories of the "global village" and the globalization of market. This global village, according to Lelliot et al. (as cited in Zemblyas and Vrasidas, 2005), is where "the educational and political significance and desirability of ICT" is based on. ICT therefore becomes a symbol and an aspect of globalization because globalization builds on and drives from it. The ultimate aim is to facilitate and accelerate Education for All, the Millennium Goal of the United Nations. In a study by (Wabuye, 2003), results indicated that computer use in Kenyan

classrooms is still in its early phases, and concluded that the perceptions and experiences of teachers and administrators do play an important role in the use of computers in Kenyan classrooms. This highlighted the need to provide pre-service and in-service training programmed.

Five possible causes of failure of the new electoral system (BVR) Biometric Voter Registration were identified, but user error/Inadequate user training tops the list. Perhaps the Kenya electoral commission did not dedicate much attention in training its employees on how to operate the systems and methods of troubleshooting in case an error occurred. Inadequate training of users might make the system look faulty therefore expert system analysts suggest that users be given proper training before an organization embraces a new system (Mburu, 2013). The study seeks to ascertain that training has an effect on ICT utilization in public organization in Kenya.

### 2.2. Cost of Equipment

Gibson, (2009) Business Dictionary defines cost as an amount that has to be paid or given up in order to get something. In business, cost is usually a monetary valuation of: effort, material, resources, time and utilities consumed, risks incurred, and opportunity forgone in production and delivery of a good or service. All expenses are costs, but not all costs (such as those incurred in acquisition of an income-generating asset) are expenses.

Simpson and Weiner, (2011) define cost as an object or action that requires the payment of a specified sum of money before it can be acquired or done. (Nzomo, 2004) notes that "Cost plus pricing" throws money out of the door. In the book, "Capon's Marketing Framework," Noel Capon writes that companies are prone to pricing too high or too low with cost-plus pricing. In markets where price isn't the most important thing to the consumer in their decision-making, his research shows that products are often underpriced. In markets where customers are counting every penny before making a buying decision, he shows that prices are often too high. Competitors are able to compete on pricing more easily with this method because they can predict your pricing ahead of time. The concept of fixed costs means that these costs never change. Rent and salaries are fixed costs. If the company produces and sells a thousand more products one month and sells fewer than the next month, the fixed costs don't change. That means if costs are the main factor in pricing, then the pricing should fluctuate from month to month. Raw materials and sales commission are variable costs or costs that change from period to period. Consumers can be skeptical of pricing fluctuations and it erodes brand trust.

Cost-push inflation happens when there is a decrease in the supply of goods because of the high cost of doing business. Precisely, it means the prices have been pushed up because of the high cost of production. Increases in the cost of doing business could emanate from costs such as rising wages and taxes and increased cost of imports or raw materials such as fuel.

When the cost of doing business increases, the increased cost of doing business is often passed on the consumer. The result is an increase in prices of goods and services, triggering cost-push inflation (Lucey, 2002)

Drury, (2004) observes that the price you set for a product or service has a very significant effect on how the consumer behaves. If consumers believe that the price you're charging is lower than competitors it could cause a major spike in sales. But if the price you set is significantly higher than expected, the response can be disappointing. In either case a change in price could produce unexpected results when it comes to consumer buying behavior.

Even if telecommunication infrastructure is beginning to spread, domestic use has, until recently, been largely confined to the small proportion of the population that can actually afford their own telephone--the cost of renting a connection average almost 20% of GDP per capita versus a world average of 9% only and 1% in high-income countries. But the high cost of mobile usage makes it too expensive for regular local calls or internet access. A common response to this is the use of text messaging; in some countries, for example, Uganda, Kenya, and South Africa, text messaging now includes delivery of information services such as news, weather. And market prices according to the ITU (2002). In Nigeria, the use of ICT has assumed increasing significance, but the operational effectiveness of the application has been far below expectation, if not disappointing (Akinyosoye, 2001). The high level of poverty and lack of infrastructure in the country have led to the absence of "buying power" in the potential ICT set up. These application failures can also be traced to two identifiable levels. First, the policy level wherein the introduction of ICTs has not been in coordination with other efforts such as the development of adequate supporting infrastructure, education and training of users. Second, the organizational level of computerization has taken place without an adequate understanding of the organizational culture and context (Soyibo et al, 2002). This also implies that catching up from a position of inadequate infrastructure and lack of organizational culture poses enormous investment challenges. This is especially so when the literacy levels of the population are extremely low with many people living outside the money economy. The study is geared towards establishing the effects of cost on the utilization of ICT in public organizations in Kenya.

### 2.3. Government Policy

Public policy is the principled guide to action taken by the administrative executive branches of the state with regard to a class of issues in a manner consistent with the law and institutional customs. In general, the foundation is the pertinent national and substantial constitutional law and implementing legislation such as the US Federal code. Further substrates include both judicial interpretations and regulations which are generally authorized by legislation (Kirkpatrick, 2000). Other scholars define it as a system of "courses of action, regulatory measures, laws, and funding priorities concerning a given topic promulgated by a governmental entity or its representatives" Public policy is commonly embodied "in constitutions, legislative acts, and judicial decisions".

Jacquetta, Newman, and White, (2012) on government actions state that; shaping public policy is a complex and multifaceted process that involves the interplay of numerous individuals and interest groups competing and collaborating to influence policy makers to act

in a particular way. These individuals and groups use a variety of tactics and tools to advance their aims, including advocating their positions publicly, attempting to educate supporters and opponents, and mobilizing allies on a particular issue.

Often, the need for public policy develops over time. In the past there might have been no way to prevent the problem from occurring, but with current technologies a solution may appear, Public policy is easier to establish when it affects smaller groups of people.

Regulatory obstacles have long been the major barrier to progress in many areas of ICTs development. Limitations of one-size-fits-all liberalization of the sector, and failure of one-operator-does-all schema is leading the debate at the World Summit on the Information Society (WSIS) beyond binary oppositions and into new and less dogmatic territory (Choike Organization, 2004)

In 2003, the WSIS held in Geneva, Switzerland came up with an e-government action plan involving applications aimed at promoting transparency to improve efficiency and strengthen citizen relations; need-based initiatives and services to achieve a more efficient allocation of resources and public goods; international cooperation initiatives to enhance transparency, accountability and efficiency at all levels of government.

To be effectively adopted, ICT requires good governance and appropriation of allocated government funds and foreign aid. In many developing nations lack of ICT policy, poor ICT project management, and corruption has led to ineffective implementation, adoption of different systems and standards, duplication of effort, and waste of technology resources. Efforts uncoordinated and initiatives are often in competition with each other rather than complementing each other. In addition, there are many unsustainable ICT programs where schools have computers that do not work as resources that are often redirected and misuse (Ford, 2007; Kessy et al., 2006)

The United Nations Development Centre in Bangkok established that the expansion of ICT has direct negative outcomes. Expenditure on ICT has been known to cause intra-household conflict, foster male dominance over resources and divert household resources away from food and other essentials. Human right concerns such as child labour have been raised over the use of conflict materials in the production of ICT devices. In many impoverished regions of the world, legislative and political measures are required to facilitate or enable application of ICTs; especially with respect to monopolistic communications structures and censorship laws.

Information Communication Technology for Development-ICT4D was first conceptualized during the 2000 Okinawa Summit of G8 Nations with the social promise of poverty alleviation. ICT was defined by the summit of nations as "one of the most potent forces in shaping the twenty-first century" making it a powerful tool in poverty reduction. The G8 Kyushu Okinawa Summit was held in July 21 to 23, 2000 in Nago City, Okinawa with three paramount themes namely; International cooperation aimed at enabling all people in the world to enjoy prosperity, achieve deeper peace of mind, and live in a more stable world. One of its fundamental goals is to attain a "globalization for all people" by bridging the widening gap between developed and developing nations, dealing with detrimental aspects of economic globalization and promoting cooperation for development in developing nations. Countries that have harnessed the potential of Information and Communications Technologies (ICTs) have attained significant social and economic development. In addition, they are rapidly transforming into information and knowledge-based economies.

The Kenya government, therefore, recognizes the role of ICTs in the social and economic development of the nation and has promulgated a national ICT Policy based on the Economic Recovery Strategy for Wealth and Employment Creation (2003-2007). This policy seeks to facilitate sustained economic growth and poverty reduction; promote social justice and equity; mainstream gender in national development; empower the youth and disadvantaged groups; stimulate investment and innovation in ICT; and achieve universal access. It is based on internationally accepted standards and best practices, particularly the COMESA Model adopted by the COMESA Council of Ministers in March, 2003.

#### *2.4. Organizational Culture*

Culture is an emergent feature of a group, which springs from the underlying assumptions and beliefs of its members about what they share in common, how the world operates and consequently, how they should relate to it. This shapes their attitudes and often their consequently behavior. (Schein, 2004) defines culture as: a pattern of shared basic assumptions (beliefs) that was learned by a group as it solved its problems of external adoption and internal integration, that has worked well enough to be considered valid and, therefore, to be thought to new members as the correct way to perceive, think, and feel in relating to those problems.

Describing the attitudinal traits or attitudinal profile of a particular population is a technique that is familiar to both the market and academic researchers, across multiple fields and disciplines.

However, in each case the starting point has to be a pre-existing framework of reference such as Ajzen's, (2002) model, or multidimensional attitude profiling (Samson & Daft, 2005) organizational culture has been variously described as a "strong prescription for success" (Martin et al., 2004) and "an interpretation for better understanding". However, in both cases the concept of "cultural analysis" has been mooted as an appropriate mechanism to allow its investigation. Group culture can manifest itself overtly through rituals and other behaviors, although often the most enduring cultural traits are embedded in the underlying beliefs held by its members (Tung, 2008). These beliefs can take one of two forms: espoused and actual. Espoused or claimed beliefs are usually those attribute that people want to be seen to possess, or believe they should demonstrate. By contrast actual beliefs are those made manifest through their unconscious behaviour. It follows that a comparison of the actual culture of a project with the espoused culture provide a basis upon which to identify the issues that to sub-optimal levels of ICT integration. The cultural analysis framework for ICT integration proposed by Brewer and Gajendran, (2007), maps the actual cultural characteristics of the environment into which ICT is deployed, comparing it to cultural stereotypes.

Previous research identified five critical success factors for integration of ICT (Chen, 2005): Organizational commitment; Organizational Attitude to Communication; Rights and Duties of Organization (in relation to ICT-mediated communications); Investment Drive, and; Risks related to ICT Usage. These revealed that the cultural values espoused by the industry were analogous to the desired cultural values for an optimized project environment, which in turn ought to facilitate ICT integration. Unfortunately, in

practice it has been found that very few real life project cultures reflect these cultural ideas, resulting in a wide disparity between the levels of ICT integration experienced by participants in different projects.

In recent years there has been a major thrust in the effort to fight longstanding gender discrimination through ICT and to empower women. In May 29 at the "International Girls in ICT Day 2012" held in Geneva, Switzerland, the ITU's Secretary General Dr. HamadounTouré said that "Technology needs girls for all sorts of reasons – but perhaps the most important one is that women drive social and economic growth. A study made by ITU shows that narrowing the gap between men and women in the workplace increases economic growth, while fighting to maintain the gap costs billions of dollars a year. Plus, a more diverse gender pool in the workplace makes for a more robust and healthy business environment. As of today, it is facts that on average women have less access to ICT than men, that they use ICT less intensively and that they are vastly out-numbered in high ICT positions worldwide.

ITU, in cooperation with Sookmyung Women's University of Korea and the Asia Pacific Information Network Center, recently funded an ICT pilot program in the Philippines and Bhutan that specifically targets rural women.

Its results show that women tend to adapt much quicker to the use of ICT once exposed to it, and participants, though initially averse to the idea of using ICT for information gathering and marketing, found the application of ICT in their local setting beneficial. The study sought to find out how organizational culture affects the usage of ICT in public organizations of Kenya.

### 2.5. Critical Review of Literature

The contribution made by the authors has helped to understand the research study at hand. The researcher has managed to compile different literature from various authors so that this can be understood. In training, (Cole, 2006) said, the purpose of training is to bring a change to the behaviour of the employee and accomplishment of the fundamental objectives through positive change in knowledge, skills and attitude of employees, thus improving the quality and quantity of work. Whereas this true, more literature need to be added in order to relate with the current study that intended to establish the factors affecting the utilization of ICT in public organizations in Kenya.

Cost can be viewed as hindering utilization, but once the other factors like; training, government policy and culture are catered for cost is reduced drastically. But cost reduction should be watched not to compromise the quality of service rendered through ICT.

The literature available on government policy seems to support ICT utilization, but on the ground very little has been done in terms of funding and implementation, otherwise literature could have been availed on the same. Culture of an organization is never static leave alone that of the employees so the implementation of ICT in public offices is an uphill task, but it needs persistence and training for that behaviour change.

### 2.6. Summary of Gaps

The literature can be summarized by outlining key sections that are perceived to influence this study. As for training organizations need to develop a flexible workforce capable of performing a range of tasks readily moving from one function to another is potentially a better option when there is no need for a fundamental change, but it requires a well-developed training and education program.

The government policy on ICT is well developed, but needs huge initial capital cost to implement which calls for partnership with the private sector to be realized. The policy on other investors who want to invest in ICT in Kenya should be flexible to encourage more players thus enhancing competition in the long run giving the customers quality and reliable services. Taxation on ICT equipment should be as low as possible to enable citizens acquire them to reduce the digital divide and allow more access. The culture of the organization is also a major factor which needs to be considered by the government if the policy on ICT has to succeed since it is perceived to cut on jobs, requires thorough and expensive training for one to be absorbed by the organization.

### 2.7. Conceptual Framework

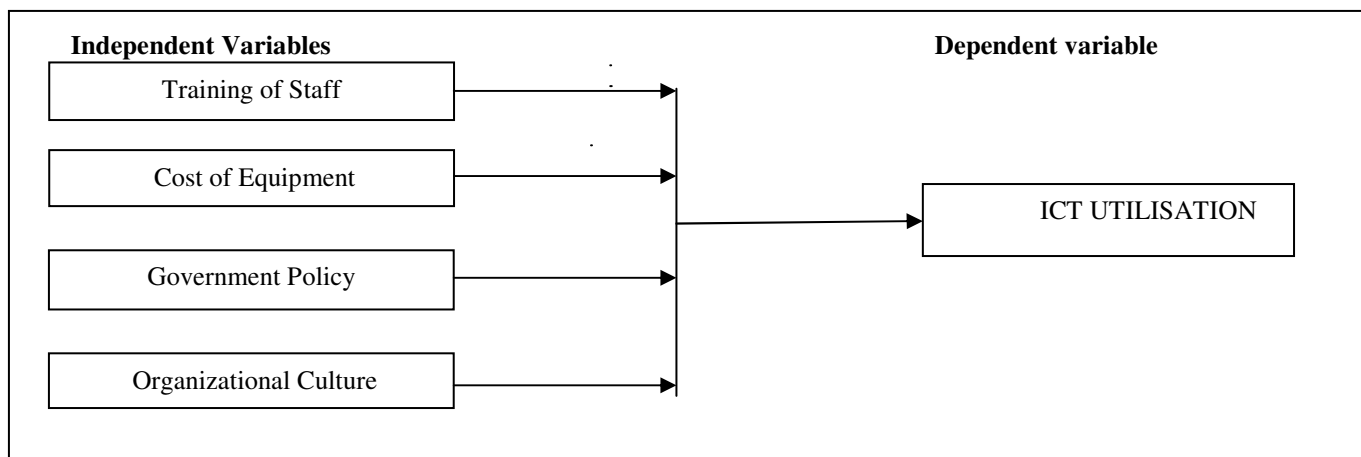


Figure 1: Conceptual Framework

Source: Author, (2014)



### 2.7.1. Training of Staff

Training offers several benefits to the organization which include; better performance as the quality and quantity of the work is high when the workers are trained, training teaches workers to make the most economical and best use of materials and equipment, the cost of production can be reduced, the supervisor can increase his span of management because trained employees need less supervision. The availability of trained personnel ensures long term stability and flexibility in the organization. Training also instills confidence to workers that they are being cared for and this will improve relationship between employees and the employer. With the help of training the best methods of performing work can be standardized and made available to all employees.

### 2.7.2. Cost of Equipment

The initial cost of investment in any business such as ICT is prohibitive, but since the fruits and savings made out of its use are long term and high an organization has no choice, but adopt ICT in their service delivery. The service is bound to be quality, timely, reduces on paperwork and eventually it is cheaper as it enhances production by saving on material wastages.

### 2.7.3. Government Policy

Sometimes government policy if not well formulated and implemented can be a hindrance itself to investment. Government policies should be flexible and should be in line with the international ones in order to fit in the global market which every nation is striving to enter to trade effectively and competitively

### 2.7.4. Organizational Culture

If there is something hard to change in an organization or in a person it is the culture or the way of doing things because it evolves over a long time. Therefore, realigning an organization to adopt ICT can be a challenging experience. However, an organization has to be bold enough to undertake the changes in order to be relevant and timely services to its customers. But, this has to be done gradually and involve the employees in every step so that they can own the whole process and embrace the technology. This can be done either through in-service training or giving staff chance to go for full time training.

## **3. Research Design and Methodology**

### *3.1. Research Design*

A descriptive survey was used as the study design to ensure an in-depth investigation of the factors affecting the utilization of ICT in public organizations; a case of Narok North district headquarters. This type of research design was suitable as it attempts to describe the nature, behavior, influence and the factors that contribute to the study. Descriptive research design gives views and feelings from the respondents regarding factors that influence the study. In descriptive research design accurate data is easily gathered through observation and use of questionnaires. Descriptive research design is more analytical and therefore it was easy for the study to quantitatively analyze the data to be obtained to determine the relationship that exists between the independent variable and dependent variable (Mugenda & Mugenda, 2003).

### *3.2. Target Population*

The target population of this study was the 234 employees working for the public sector of Narok North district headquarter offices. The study targeted the heads of department (HODs), heads of section or supervisors, operational staff and support staff drawn from all the departments (ministries) within the district headquarters.

According to (McKevitt and Lawton, 2003), they define population as the entire group of individuals, events or objects having common observable characteristics for which the researcher wants to generalize the result of the study.

Category	Target Population	Percentage (%)
Head of Department (HOD)	24	10
Supervisors	30	13
Operational Workers	120	51
Support Staff	60	26
<b>Total</b>	<b>234</b>	<b>100</b>

*Table 2: Target Population*

*Source: Narok County Human Resource Records, (2014)*

### *3.3. Sample Design and Sampling Technique*

The study used stratified random sampling design (Kothari, 2009) points out that stratified random sampling method ensures inclusion. In this method sub groups which otherwise could have been omitted entirely by other sampling methods was best suited for this research. This method helps minimize bias in sample selection. The researcher used 30% of the total population as sample size.

Category	Target Population	Sample Size	Percentage (%)
HOD	24	7	10
Supervisors	30	9	13
Operational Staff	120	36	51
Support Staff	60	18	26
<b>Total</b>	<b>234</b>	<b>70</b>	<b>100</b>

Table 3: Sample Size  
Source: Author, (2014)

### 3.4. Data Collection Instruments and Procedure

The study used questionnaires as the main instruments for collecting data. The selection of these tools was guided by the objectives of the study. The questionnaire had five sections namely; A, B, C, D, & E with thirty questions. The questionnaires were administered to the various departments in the district headquarters in order to get the employees opinions on the factors affecting the utilization of ICT in public service of Narok North district headquarters. (Lokesh, 2003), the type of questions used was both open and closed ended. Closed ended questions were used to ensure that the given answers are relevant. Open ended questions were provided with enough space for the respondents to express their opinion, thus creating confidentiality since the information given by the participants was completely anonymous. The sample groups were invited to participate voluntarily by an introductory letter which was attached to the survey questionnaire. The instruments were assembled in packets and were distributed by the researcher through the heads of departments (HODs) of various departments to their employees. Completed questionnaires were returned to the HODs from whom they were collected by the researcher.

#### 3.4.1. Validity & Reliability of Research Instruments

The researcher obtained authority from the various heads of department HODs in the district headquarters to distribute the questionnaire. The questionnaire was tested to ensure it was reliable using the test re-test method on public service offices at Narok South District Headquarters. The sample of respondents who were used in the pre-test was 7 (10%) of the entire selected sample (Mugenda and Mugenda, 2003), these respondents were selected using purposive random sampling techniques and were not included in the final study. The questionnaire was then corrected before the final distribution. The study selected Narok South District Headquarter offices for the pilot study because it was within the reach of the study.

### 3.5. Data Analysis

According to (Kothari, 2009), data analysis procedure includes the process of packaging the collected information putting them in order and structuring its main components in a way that the findings can easily and effectively communicated. After the field- work, before analysis was done, all questionnaires were adequately checked for reliability and verified accordingly.

Editing, coding and tabulation were carried out. The data was analyzed using the descriptive analysis method where the measure of central tendency namely the means, median and modes and measures of percentage were computed. Use of frequency description tables and the various percentages description charts to describe the views, attitudes and feelings of the respondents was used in the presentation of data.

## 4. Data Analysis, Presentation and Interpretation

### 4.1. Demographic Profile of the Study Respondents

The respondents' characteristics were considered to be important to this study as they helped to establish the respondents' differences and find out how they may affect the outcome of the study. For this study the various demographic characteristics of the respondents were; gender, age, marital status, academic qualifications and work experience.

#### 4.1.1. Age of Respondents

Age of the respondent's forms an important aspect of ICT use, this study considered age of the respondents as it was to assist in establishing whether it has an effect on ICT utilization in public offices in Narok North district headquarter. The results are presented in figure 2 below.

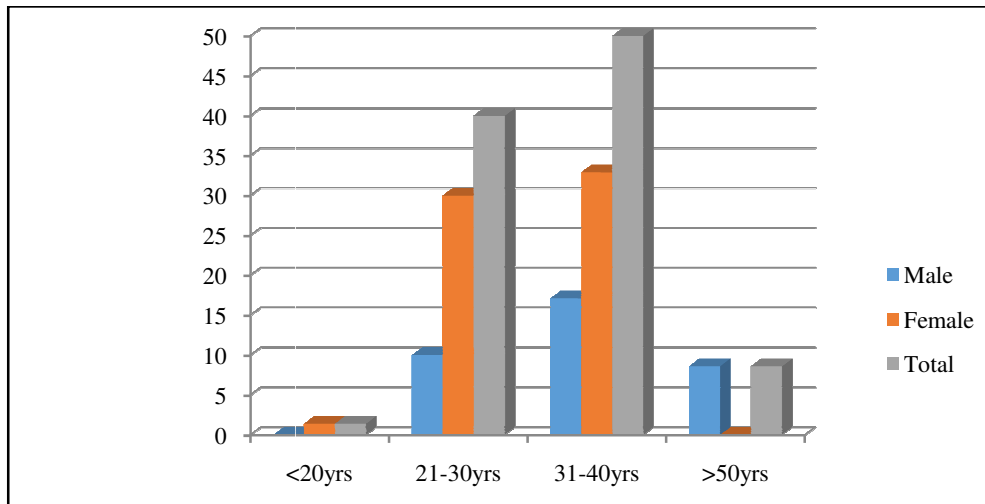


Figure 2: Age bracket of Respondents  
Source: Author, (2014)

From the illustrations of Figure 2 only 1(1.4%) respondent (a female) was below 20years old. Otherwise most respondents 23(32.9%) were in the age bracket of 31-40years, followed by 21(30%) those aged 21-30years, then 19 respondents representing 27.1% were in the age bracket 41-50years, while those above 50years were only 6(8.6%) and all of them male. On overall, majority of the workers 90% are in their productive age.

4.1.2. Gender of the Respondents

Gender is an important factor to consider for any study that seeks to find out the perceptions and views of individuals in a particular setting. For this study, it is noted that utilization of ICT might be influenced differently by different gender. The results of this study are presented in Figure 3.

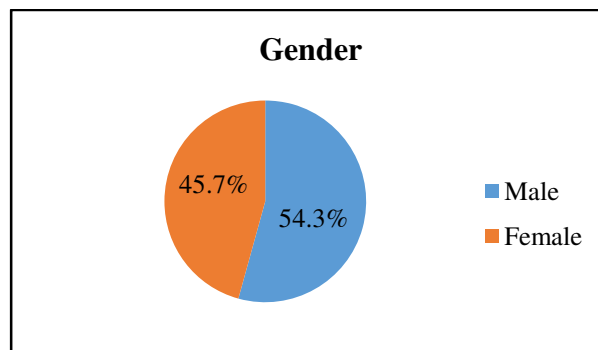


Figure 3: Gender of Respondents  
Source: Author, (2014)

The results of this study show that majority of the officers 38(54.3%) in Narok North district headquarter offices were male while 32(45.7%) were female.

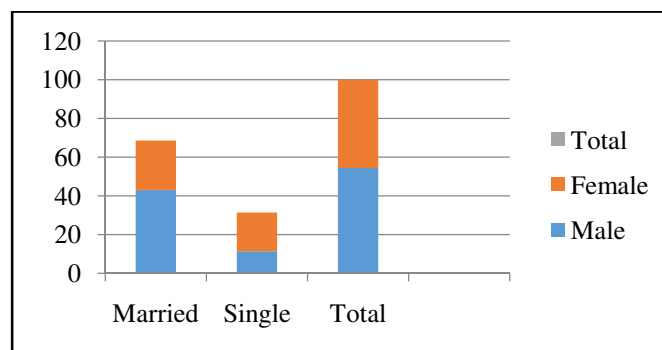


Figure 4: Marital Status of Respondents  
Source: Author, (2014)

4.1.3. Marital Status of Respondents

On marital status of respondents Figure 4 shows there were only two states namely married and single. Married respondents were 30 male representing 42.9%, 18 female representing 25.7% and singles were 8 male representing 11.4%, 14 female representing 20%. The study revealed that the respondents to be of stable families since no divorce and separation cases were indicated.

4.1.4. Level of Education of the Respondents

It was also important to establish the level of education of the officers as it might have had an effect on the ICT utilization of ICT in government offices, this study sought to find out the factors affecting the utilization of ICT in government offices in NN district headquarters and level of education was considered to establish whether it had a role to play in the use of ICT in the offices. The results are presented by Figure 4

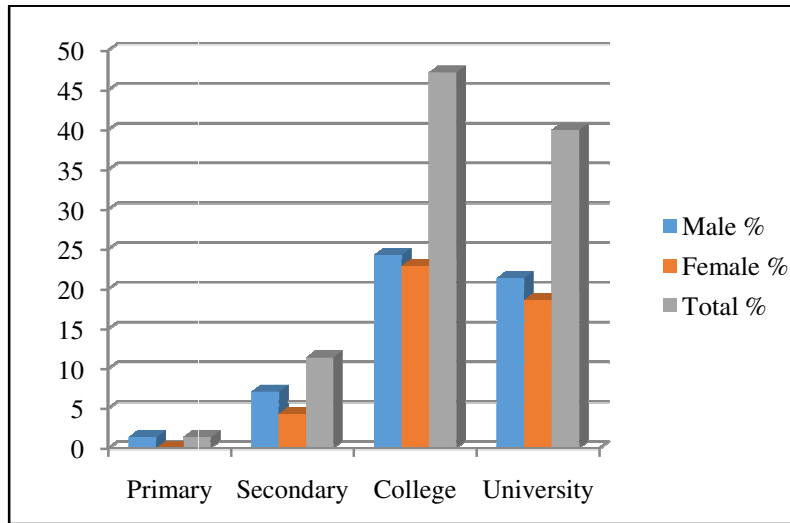


Figure 5: Level of Education of Respondents  
Source: Author, (2014)

From Figure 4 the results show that majority of the respondents 33(47.2%) had college level education, 28(40%) university level while a minimal 9(11.4%) had gone up to secondary, with only one respondent a male having primary education. From the findings it shows the respondents are a learnt lot who are expected not to have any problem with ICT use in their service delivery.

4.1.5. Work Experience

Experience was considered in this study as it had an effect on the utilization of ICT in the government offices in the district headquarter. Results are presented by Figure 6 below.

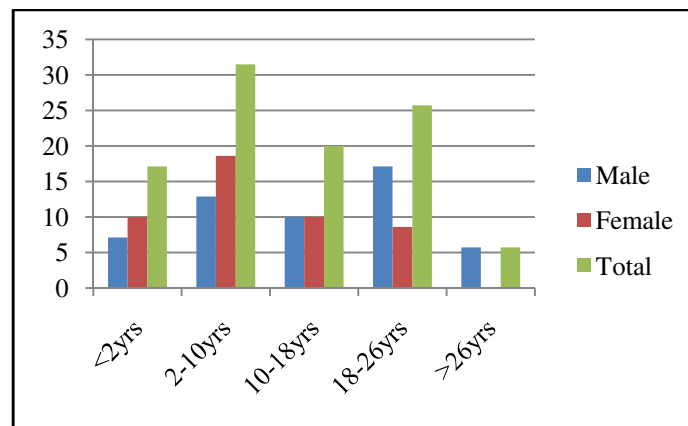


Figure 6: Work Experience Source: Author, (2014)

Figure 5 shows that majority of the respondents had a work experience of 2-10years 31.5% followed by those with 18-26years 25.7%, 10-18years 20%, below 2years 17.1% and the least number was those with over 26years 5.7% all of them being male. The results indicate that most of the respondents are experienced civil servants with some having worked for more than a quarter century.

## 4.2. Analysis Based on the Study Objectives

## Section B: Effects of Training on the Utilization of ICT in Public Organizations.

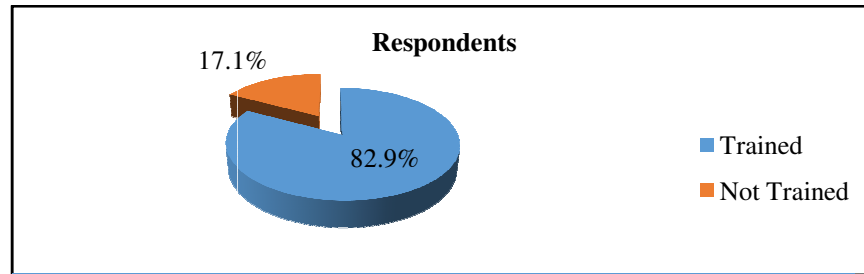


Figure 7: Respondents Training Status

Source: Author, (2014)

## 4.2.1. Training Status

Apparently from Figure 7 majority of the respondents 82.9% representing 58 officers had been trained in ICT with most of them having acquired their training externally or by going to college for formal courses in ICT. This leaves 12(17.1%) out of the 70 officers having no training in ICT even through what is perceived to be the easiest means of training namely informal or on the job training or by experience

S/no	Statement	Agree	Not sure	Disagree
1	Training affects utilization of ICT in public organizations to a large extent	47(67.1%)	7(10%)	16(22.9%)
2	My department involves me in some ICT training programme	31(44.3%)	7(10%)	32(45.7%)
3	My department has an ICT training budget	18(25.7%)	19(27.1%)	33(47.1%)
4	ICT equipment is hard to operate without training	42(60%)	7(10%)	21(30%)
5	I require some more training in ICT	64(91.4%)	4(5.7%)	2(2.9%)

Table 4: Respondents Views and Opinions on the Effects of Training on the Utilization of ICT in Public Offices

Source: Survey, (2014)

From Table 4, 47(67.1%) respondents were in agreement that training affects ICT utilization in public organizations to a large extent, 7(10%) were undecided while 16(22.9%) disagreed with the assertion. 32(45.7%) disagreed that their department involved them in some training program, while an almost equal number of respondents 31(44.3%) were in agreement leaving only 7(10%) respondents being uncertain. On departmental ICT training budget 33(47.1%) indicated that they disagreed, 19(27.1%) were not sure and 18(25.1%) indicated they were in agreement. 42(60%) officers felt ICT equipment is hard to operate without training leaving 21(30%) disagreeing and 7(10%) not sure. Majority of the officers 64(91.4%) indicated they required some more training in ICT, 2(2.9%) disagreed with the statement with a mere 4(5.7%) respondents being undecided. On overall the study findings reveal that majority of the officers felt training has an effect on the utilization of ICT in public offices.

## 4.2.2. Cost of Equipment

S/no	Statement	Agree	Not sure	Disagree
1	In my department every staff is supplied with a computer	5(7.1%)	3(4.3%)	62(88.6%)
2	Cost of training is high and time consuming	26(37.1%)	10(14.3%)	34(48.6%)
3	Cost of operation namely calling and browsing is friendly	39(55.7%)	11(15.7%)	20(28.6%)
4	ICT equipment have high maintenance costs	35(50%)	14(20%)	21(30%)
5	Taxation on ICT equipment should be removed to make them affordable	57(81.4%)	9(12.9%)	4(5.7%)

Table 5: Respondents Views and Opinion on how Cost of Equipment Affects ICT Utilization

Source: Survey, (2014)

Table 5 on officer's views and opinion on how cost affects ICT utilization 62(88.6%) of the respondents strongly disagreed that in their department every staff is supplied with a computer while 5(7.1%) were in agreement with only 3(4.3%) being not sure. On cost of training being high and time consuming 34(48.6%) of the respondents disagreed, 26(37.1%) agreed leaving only 10(14.3%) of the respondents uncertain. For cost of operation namely calling and browsing being friendly 39(55.7%) were in agreement, 20(28.6%) disagreed and 11(15.7%) being not sure or undecided. On ICT equipment having high maintenance costs statement half of the respondents 35(50%) were in agreement, 21(30%) disagreed while 14(20%) were not sure. Majority of the respondents 57(81.4%) agreed that taxation on ICT equipment should be removed to make them affordable. Only 4(5.7%) of the respondents disagreed while those undecided were 9(12.9%). On overall the study has established cost to be a strong factor in determining the level of utilization of ICT in public offices.

#### 4.2.3. Government Policy

S/no	Statement	Agree	Not sure	Disagree
1	Am aware of the government policy on ICT	33(47.1%)	25(35.7%)	12(17.1%)
2	Acquiring a telecommunication operating license in Kenya is bureaucratic and expensive	17(24.3%)	41(58.6%)	12(17.1%)
3	The government is committed in the implementation of the ICT policy in its service delivery	44(62.9%)	16(27.9%)	10(14.3%)
4	The government policy on disposal of obsolete ICT equipment is not clear	30(42.9%)	28(40%)	12(17.1%)
5	The government policy on vandalism of ICT equipment/infrastructure is not preventive or discouraging	27(81.4%)	29(41.4%)	14(20%)

Table 6: Respondents Views and Opinions on how Government Policy Affects ICT Utilization in Public Offices

Source: Survey, (2014)

From Table 6 on officer's views and opinion on the extent to which government policy affects ICT utilization in public offices the following were the reactions; 33(47.1%) respondents agreed that they were aware of the government policy on ICT, 25(35.7%) were not sure while 12(17.1%) indicated they were not aware. 41(58.6%) respondents were not sure of the bureaucracy and cost of acquiring a telecommunication operating license in Kenya, only 17(24.3%) agreed while 12(17.1%) disagreed. On the government commitment in the implementation of the ICT policy in its service delivery most of the respondents 44(62.9%) agreed, 16(27.9%) were not sure while 10(14.3%) disagreed. 30(42.9%) respondents agreed that the government policy on disposal of obsolete ICT equipment is not clear, 12(17.1%) disagreed with the statement but 28(40%) indicated they were not sure. Majority of the respondents 29(41.4%) were not sure on the government policy on vandalism of ICT equipment not being preventive or discouraging, 27(38.6%) agreed while only 14(20%) disagreed.

The study results have shown that government policy on ICT is not clear to most respondents, its adequacy and implementation is also an issue.

#### 4.2.4. Organizational Culture

S/no	Statement	Agree	Not sure	Disagree
1	My department embraces use of ICT	52(74.3%)	9(12.9%)	9(12.9%)
2	I prefer using a computerized system to a manual system in my daily activities	56(80%)	6(8.6%)	8(11.4%)
3	Computerized systems improve the quality of my job	58(82.9%)	6(8.6%)	6(8.6%)
4	I believe that using computerized systems is a waste of time and effort	8(11.4%)	8(11.4%)	54(77.1%)
5	The use of ICT in service delivery leads to job cuts or lay-offs	25(35.7%)	14(20%)	31(44.3%)

Table 7: Respondents Views and Opinions on how Organizational Culture Affects ICT Utilization in Public Offices

Source: Survey, (2014)

Table 7 on the effects of organizational culture on the utilization of ICT in public organizations most of the respondents agreed or were of the opinion that organizational culture affects ICT utilization since over 80% of the respondents agreed with the objective statements namely; my department embraces use of ICT 52(74.3%), I prefer using a computerized system to a manual system in my daily activities 56(80%); computerized systems improve the quality of my job 58(82.9%), I believe that using computerized system is a waste of time and effort 54(77.1%) disagreed implying they felt otherwise. The statement use of ICT in service delivery leads to job cuts or lay-offs got support from many respondents 25(35.7%), 31(44.3%) felt it is not the case while 20% representing 14 respondents were not sure. Therefore, the results clearly indicate that organizational culture in this case has a positive effect on the utilization of ICT in government offices apart from fear of losing jobs.

#### 4.2.5. Open Ended Questions Responses

4.2.5.1. SECTION: D. In your opinion what else do you think the government should do to increase ICT utilization in your work place?

Response	Frequency	Cumulative	Percentage	Cumulative
Strong policy on training	30	30	40	40
Lower cost of ICT equipment	27	57	36	76
Provide ICT equipment and internet	9	66	12	88
Non response	9	75	12	<b>100</b>

Table 8: Respondents' Opinions on what else the Government should do to Increase ICT Utilization in the Work place.

Source: Survey, (2014)

From the list of responses and Table 8 majority of respondents 30 representing 40% felt a strong policy on training and provision of training to all workers is required, 27 respondents equivalent to 36% were of the opinion that the government should lower the cost of ICT equipment to make them affordable, but 9(12%) respondents felt the government should provide ICT equipment and internet connection to all civil servants as measure to increase ICT utilization in the work place. Of all the 75 responses received non responses were 9 representing 12%. Therefore; training for all, cost of ICT equipment, provision of ICT equipment and internet network availability in that order were the main concerns of the respondents.

Response	Frequency	Percentage
Health	16	22.9%
Retrenchment/Unemployment	17	24.3%
Associated with ranks and age	11	15.7%
Non response	11	15.7%
Moral indecency	5	7.1%
Waste of time and money	4	5.7%
Leads to corruption	4	5.7%
It will be stolen	3	4.3%
No privacy	4	5.7%

Table 9: Opinions of Officers on Culture or Beliefs that hinder ICT Utilization in Government Offices

Source: Survey, (2014)

Table 9 and the list of responses on the open ended question on culture or beliefs that the respondents feel hinder ICT utilization in government offices the ranking was as follows; fear that the use of ICT/computer causes chronic diseases including affecting eyes representing 22.9% was the majority, fear of being retrenched and being rendered jobless 24.3%, it is associated with ranks and age, leads to indecency 7.1%, while an equal number felt it is a waste of time and money 5.7%, leads to corruption 5.7%, no privacy 5.7% and lastly others had fear of the equipment being stolen 4.3%. in the work place. Non response was also rampant representing 15.7% same as those who felt computer use is for managers and the young generation.

#### 4.3. Summary of Data Analysis

##### 4.3.1. Background Information

Out of the 70 respondents 38 were male while 32 were female drawn from various departments and ranks with the support staff being the majority, operational staff, supervisors and HODs being the least in number. When this information is presented in a pie chart form the male are majority occupying 196° while, female is less by six representing 164°.

The age bracket of most respondents is 21-50 years representing 90% of the 70 officers who responded. Majority of the respondents were married and the rest single with no divorce or separation cases. None of the respondents was below secondary level of education most of them had attained college and university education. The results indicate that most respondents had been in service for more than 2years, but for less than 26years. Only 4 men equal to 5.8% had worked for more than 26years. Those below 2years of service were students on their final attachment or who had just graduated.

##### 4.3.2. Training

Majority of the respondents 82.9% are trained in ICT through informal and formal training mode. From the results 67% of the respondents indicated that training has an effect on ICT utilization to a large extent. Some departments have no training programs for their staff nor do they have budget allocation for training. Over 90% of the respondents indicated strongly that they need more training in ICT while a mere 8.6% were contented with the status quo or undecided.

##### 4.3.3. Cost

Majority of the respondents expressed that not all staff are provided with a computer. About 40% of the respondents felt cost of training is high and time consuming while 50% of the respondents indicated otherwise. 56% of the respondents agreed that cost of operation is friendly. On maintenance cost of ICT equipment 50% of the respondents indicated that it was high. However, over 80% of the respondents strongly felt that taxation on ICT equipment should be removed to make them affordable even for personal use.

##### 4.3.4. Government Policy

More than 50% of the respondents expressed that they were ignorant of the government policy on ICT. We had the highest number of respondents 58% being uncertain of the licensing expenses and the bureaucracy involved. About 63% of the respondents felt the government was committed in the implementation of ICT policy in its service delivery, but 28% were not sure. Almost an equal number of respondents 42.9% and 40% felt policy on disposal of obsolete ICT equipment was not clear and those who agreed with the statement on disposal. Over 60% of the respondents were either not sure or agreed to the statement that policy on vandalism not being deterrent. From the open ended responses training for all, cost of ICT equipment, provision of ICT equipment and internet network availability in that order were the main concerns.

#### 4.3.5. Culture

Majority of the respondents 70% indicated that their departments embraced use of ICT, while the remaining 30% were either not sure or disagreed. Over 80% of the respondents preferred using a computerized system to a manual one. Another 80% again agreed that computerized systems improved quality of their job as another 77% indicated that using computerized system was not a waste of time and effort. However, 35% of the respondents expressed fear that the use of ICT in service delivery may lead to job cuts or layoffs, but 31% disagreed. The other responses including fear of chronic diseases, waste of time and money, leads to corruption, computer use is meant for bosses and the young generation and security of equipment were all negative.

#### *5.1. Summary of Findings*

##### 5.1.1. How does training affect the utilization of ICT in public organizations?

Majority of the officers in Narok North district headquarter who participated in the study indicated they had acquired some training in ICT and were in agreement that training affects utilization of ICT to a large extent. Most of them also indicated that ICT equipment operation is hard without training and thus called for more training programs on ICT and budget allocation as it was lacking in their departments.

##### 5.1.2. How does cost affect the utilization of ICT in public organization?

Majority of the officers indicated that not everybody had access to a computer in the office it was either for the head of department (HOD) or shared. On cost of training majority felt it was unaffordable, but they were comfortable with the cost of operation. Almost all the officers called for the removal of taxation on ICT equipment to increase accessibility even at individual level. The maintenance cost of ICT equipment is also prohibitive as indicated by most officers.

##### 5.1.3. To what extent does government policy affect the utilization of ICT in public organizations?

Only half of the officers were aware of the government policy on ICT although majority felt the government was committed in implementing the ICT policy in its service delivery. On the following policy issues half of the officers were not sure while the half was aware. The issues were policy on disposal of obsolete and faulty equipment, ICT infrastructure vandalism and the acquisition of operating license being expensive and bureaucratic in Kenya.

##### 5.1.4. How does culture affect utilization of ICT in Public organizations?

Most of the officers were positive on the use of ICT in their service delivery since they indicated that their departments embraced use of ICT, they preferred using computerized systems to manual ones and agreed that computerized systems improve quality and it is time saving. But some officers were pessimistic that the use of computer causes chronic diseases and it leads to retrenchment or job loss.

#### *5.2. Conclusion*

From the demographic characteristics of the officers who participated in the study “factors affecting the utilization of ICT in public organizations a case of Narok North district headquarter offices” the following conclusions can be drawn; gender is balanced almost at 50-50, majority of the officers are at the peak of their productive age 25-50years, majority staff have enough experience in their work implying high efficiency in service delivery, most of the officers have gone beyond secondary level of education with the highest number being graduates and they are of stable families as no divorce and separation case is indicated.

On overall the study findings revealed that majority of the officers felt training has an effect on the utilization of ICT in public offices from their indication that ICT equipment is hard to operate without training and the desire for more training in ICT to be compliant. Cost was also considered to be a strong factor in determining the level of utilization of ICT officers as most of them called for zero tax rating of ICT equipment to make them affordable and allow access. The government policy on ICT is not clear as most of the officers were ignorant of its existence and content. The study also established that the officer’s responses on culture were positive apart from those who were suspicious that ICT use may lead to job lay-offs or retrenchment, while others expressed fear of contracting incurable diseases like cancer and eye problems which is yet to be ascertained. Otherwise majority indicated that they preferred computerized systems to manual ones, since they felt it leads to quality job, faster service delivery and the heads of department (HODs) embraced use of ICT in their departments.

#### *5.3. Recommendations*

Government should promote ICT in education at primary, secondary, tertiary and community levels by developing ICT, curricular and ensuring that teachers/ trainers possess the requisite skills. Establish network for sharing training resources and developing strategies to support research and innovation. Support software development with local content and provision of infrastructure such as energy, water and roads to give incentive to ICT service providers to cover even the rural areas. Ensure development of ICT institutional framework for policy development and dissemination. Facilitate the development of sect-oral ICT policies and strategies like e-health, e-learning, e-agriculture and e-commerce. Government should create awareness on the benefits of ICT to the public and develop knowledge sharing centers like the digital villages initiative.



#### 5.4. Suggestions for Further Studies

The study sought to find out the factors affecting the utilization of ICT in public organizations but the researcher suggests for a similar study can be carried targeting the private sector for comparison purposes and validation of the factors or for enhancing the objectives outlined. The researcher also suggests a study on the effects of ICT on poverty alleviation and another one on the factors hindering women participation in the ICT industry whether in public or private sector.

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