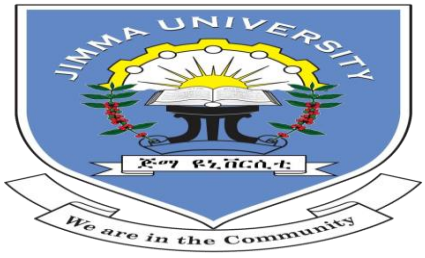

JIMMA UNIVERSITY

JIMMA INSTITUTE OF TECHNOLOGY

FACULTY OF COMPUTING AND INFORMATICS

INFORMATION MANAGEMENT CHAIR

RESISTANCE TO NEW TECHNOLOGY ADOPTION AND USAGE IN OROMIA REGIONAL GOVERNMENT BUREAUS, ETHIOPIA

BY: TAMMIRU KABBADA

JIMMA, ETHIOPIA

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RESISTANCE TO NEW TECHNOLOGY ADOPTION AND USAGE IN OROMIA REGIONAL GOVERNMENT BUREAUS

A Thesis Submitted in Partial Fulfillment of the Requirements for Degree of Masters of Science in Information Science (Electronic and Digital Resource Management (EDRM)

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DEDICATION

This work is dedicated to my beloved Mother Bizunesh Lamu who I lost in 10/7/2011.

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Acronyms and Abbreviations

BI…….Behavioral Intention

CIO……..Chief Information Officers

ETB……..Ethiopian Price (Birr)

G-20…….The group of economically developed world 20 country

GDP……..Gross Domestic Product

GDS.....Government Digital Service

ICT…… ……Information Communication Technology

IT.....Information Technology

SPSS…….Statistical Package for Social Science

TAM…….....Technology Acceptance Model

Abstract

New technology refers to technology that radically alters the way something is produced or performed, especially by labor-saving automation or computerization and any form of technology which is more advanced or automated relative to that which preceded it in a given social context. It accelerates the service we provide and allows us to acquire, collect, organize, analyze, access and share information in a large organization or between organizations effectively and efficiently. While the use and application of new technology has become near everywhere around the world the actual adoption and usage of these new and emerging technologies across most organizations continues to be less than optimal. Due to several barriers, technology adoption and usage at an organizational level is often slow or even nonexistent. The availability, quality and accessibility of infrastructure within the organization are the main factors of such barriers. The second factor is employee resistance new technology adoption and usage in an organization due to different factors. Finally there is also resistance from administrative of the organization in adoption and usage of new technology due to different factors. The main objective of this study is to access resistance to new technology adoption and usage in Oromia regional government bureaus. To conduct these study four bureaus (Oromia information communication and technology authority, Oromia revenue authority, Oromia health bureaus, and Oromia public service and human resource management) have been selected purposively and descriptive research method which included quantitative and qualitative approaches was used. The total population of the study was 870 from which 267 was taken using simple random sampling techniques. In order to gather the data that answers the research questions, closed-ended questionnaire and interview was used. Then the data that have been gathered was analyzed by statistical package for social science by descriptive and inferential statistics. The overall analysis of the data shown that, in Oromia regional government bureaus new technologies have been not adopted and used successfully due to employee challenges, administrator challenges and infrastructure factors. To overcome this resistance factors the regional government should have implement the developed strategy and what recommended by the researcher of this research.

Key word: *New technology, technology acceptance model, technology adoption and usage, new technology resistance,*

Chapter One

Introduction

1. Background of the study

Organizations are adopting new technologies for business process to increase their overall performance, which lead to more efficiency, improve their responsiveness, competitiveness, and cultivate their innovativeness (Unhelkar & Murugesan, 2010). The term new technology refers to overall process of invention, innovation and diffusion of technology or processes. The introduction of new technology in an organization provides a number of benefits such as sustainable competitive advantage, lower production and labour costs (Nguyen, 2013). Introduction of new technology has become vital in all sectors so as to reduce cost and compete with the national and international markets (Jaffee et al., 2012). Further, new technology is the concept of integration of Information Communication Technology (ICT) which is the combination of hardware, software, data, information and society that access the service. Today new technology is integral to every business process either private or government to speed up the way service are given for a customer or a public servants in an efficiently and effective manner. Though the usage of this new technology is a crucial point of view for organizations those provides service for large number of population especially in government organization (Sugantha.S, et al, 2018).

In recent years, growth of the ICT has had a substantial impact on the way local, state and national governments function. ICT refer to technologies such as the Internet, Intranets, Extranets, ERP and other such technologies that cover the spectrum from basic infrastructure adoption and usage to technologies that improve services and operations in an organization. In today's rapidly growing digital era new technology is the fundamental aid of doing every activity. It accelerates the service we provided and allows us to acquire, collect, organize, analyze, access and share information in a large organization or between organizations effectively and efficiently. New technology has transformed the way in which organizations store and manage information (Subhasish.D, 2018).

Technology today is evolving at such a rapid pace, enabling faster change and progress, causing an acceleration of the rate change, until eventually, it will become exponential. Artificial Intelligence has already received a lot of buzz in the past decade, but it continues to be one of the new technology trends because its notable effects on how we live, work and play are only in the early stages. Is already known for its superiority in image and speech recognition, navigation apps, smartphone personal assistants, ride-sharing apps and so much more (Nikita, 2021). Like Artificial Intelligence Robotic process automation is another technology that is automating jobs. Robotic process automation is the use of software to automate business processes such as interpreting applications, processing transactions, dealing with data, and even replaying to emails. Robotic process automates repetitive tasks that people used to do (Nikita, 2021).

New technology is one of these technologies that applied in the workplace are planned, strategized, adopted and used to successfully meet up with the technology demands (Hettiararchchi, 2014). Some scholars have indicated that these new technology programs succeed while others do not because some employees' resist new technology due to fear of losing their jobs, distress and anger when it is not properly managed (Visagie, 2010). Further Ahadi, 2013 confirmed the idea as: "Employee attitudes are essential for new technology to an extent that a negative attitude that is attitude of ignorance and resistance can easily nullify the new effort."

The development of digital technologies and internet has had a remarkable impact, not only on the lives of individuals, but also on the organizational working and decision making process. Digital information technologies can facilitate the conversation of information collected in the organization and from specialized workers into organizational knowledge, by allowing global and updated communication, distribution of relevant content, and the sharing of work between workers, while transcending the limitations of time, place and specialties (Potter & Gittigan, 2013; Tsui & Malhotra, 2015). Digital Information Technology (IT) facilitates the generation of customer-tailored solutions and products in organizations and shortens the duration required to integrate these solutions and products into the market (Jackson, 2008). The type of digital applications that they use in their personal lives, namely, by the culture, communication methods, and commerce that are typical of the surrounding environment (Galvez et al., 2016).

Effective adoption and use of various technologies along with modern business process in private, public, and non-for-profit organizations are essential for them to become and remain successful enterprises. Rapid and significant technological changes and newer business models and process often make it difficult for managers to determine what new technologies to use and under what circumstances it is appropriate to adopt them. Effective use of various technologies in organizations is a key to success in this age of rapid technological innovation. Many of these technologies have created substantial and positive disruptions in organizational processes and operations. Some organizations have been struggling with these rapid technological disruptions. Managers are uncertain about when and under what conditions they should adopt a new technology (Rassule & Daniel, 2020).

But there is a great gap nearly in all government organization on the usage of this new technology today. However, employees are continually faced challenges with these technologies (Iwhiwhu, 2009). Employee resistance and low motivation to use new technology is a problem that continues to trouble business and educational organizations throughout the world (Ngafeeson, 2015). This author is concluded that employee resistance to new technology without geographical boundaries or across the world is the number one factor that challenge every organization without considering type, location, structure and its strategies. The adoption of technology is likely to be slow in the case where technology requires complex new skills and is expensive to implement and time-consuming (Long & Coninx, 2016). To face the rush of competition and to remain in existence, organizations need to change their strategies, processes, structure, and culture (Keong & Dastane, 2019).

Hence the purpose of this study was to conduct assessment on the resistance to new technology adoption and usage in oromia regional government bureaus.

1.2. Statement of the problem

Government organizations are the organizations that serve all the society of the country. In doing so the organization must have effective, efficient, fair and timely provide theses service for its society. To provide these service accordingly the organization have adopt or use new technology. While the use and application of new technology has become near everywhere around the world, the actual adoption of new and emerging technologies across most organizations continues to be less than optimal. Due to several barriers new technology adoption at an organizational level is often slow or even nonexistent. This keeps old legacy systems alive and hinders an organization from achieving its full potential efficiency (Frank & Sinha, 2020).

New technology adopted and used at any level of an organization, but leadership or administrative is necessary to implement these changes. Leadership for new technology adoption and usage can come from managers, executives, professionals, and union leaders. In most organizations the decision to invest in new technology appears to be primarily a management decision, with professional or technical consultation, although there are some joint labor/management initiatives. Even in relatively flat organizational structures a person or relative small group of people initiate the change, commit the resource, and establish the cultural framework for new technology adoption and usage (Edward, et al., 2021).

Successful adoption and usage of technology change requires visionary leadership that has considered the benefits; consulted with influential leaders at all levels to identify unintended consequences, identified sources of resistance, and develop a detailed plan to foster the adoption and usage over time. Spending the time to carefully create a well thought out plan for adoption and usage is the key to success. Thought should be put into demonstrating how the new technology will serve all staff and not just management. Failure to communicate this to users may cause the adoption and usage effort to fail despite considerable time and effort spent on the roll out (Luo, 2016).

Once an organization has selected and approved a new technology tool, it must be adopted and used and introduced to employees. Organizations failing to introduce their planned changes successfully can pay a high price that could lead to lost market position, credibility with stakeholders, decreased staff morale, and loss of key employees (Edmonds, 2011). When

investing on a technology change that will impact an organization, a great deal of thought must be put into the adoption and usage of that change. To remain competitive, it is essential for organization to be able to upgrade their tool set on a regular basis and have these changes accepted by staff. There are many items to consider when bringing new technology into an organization. It is important to note that altering staff behavior is a long term objective and change cannot be forced on employees immediately, it is keys to provide them with the context for the change so they are able to understand the need for it (croft & Cochrane, 2005). Introducing changes within organization can cause disruption in patterns or behaviors that can cause loss of continuity, replace customary social structures and familiar relationships (Agboola, 2011). Adopting new technology can mean changes to job responsibilities, added work load, additional training and personnel. Technology changes of this nature can also impact the politics of an organization. Those who possess certain skills and abilities may see change as a threat to their positions and undermining their job competences. As Meseret, 2019 concluded that most of the staff members in every department are not ready and well-come for new technologies. They resist when new technologies are introduced. It is therefore, in adopting and implementing new technology making employee ready and accepting the new technology adopted and used is the hard work of the administrative.

If the use of technology is going to be heavy, its uptake is going to be disappointing too. Another requisite for creating a culture of technology adoption lies in making the infrastructure around it including Information Technology networks systems, software, process, and practices, supportive and user friendly. New technology use at any level needs good infrastructure including computer hardware and peripherals, people who know procedures and trained end users etc. As (Andrew & Birnbaum, 2020) concluded, all firms require technology. When technology becomes complex and sophisticated, it is built on bedrock of preexisting technical and scientific knowledge that forms a necessary, rudimentary infrastructure for any business activity. Therefore the way that a firm approaches technology, and the way it builds technology into its strategy, requires that key decision makers understand the nature of its technological environment and the level of development of the technological infrastructure.

To the end as a part of our country the adoption and usage of new technology to improve the quality of service is not effective. This is due to different challenges that hinders the adoption

and usage of new technology at different level of organizational structure either in a government or privately owned. So the main purpose of this study was assessing the resistance new technology adoption and usage in oromia regional government bureaus.

1.3. Research question

The main purposes of this study have been to investigate the resistance to new technology adoption and usage in Oromia regional government bureaus. Therefore the overall frame work of the study was guided by the following three basic research questions:-

1. What are infrastructure factors in resisting new technology adoption and usage in Oromia Regional government bureaus?
2. What challenges from administrative in resisting new technology adoption and usage in Oromia Regional government bureaus?
3. What challenges from employees in resisting new technology adoption and usage in Oromia Regional government bureaus?

1.4. Objective

The following general and specific objectives are outlined to conduct this research and to solve the problem that initiate this study.

1.4.1. General objective

The main objective of this research is to assess the resistance to new technology adoption and usage in Oromia regional government bureaus.

1.4.2. Specific objectives

The specific objectives of this study were:

- ✓ To assess infrastructure factor in resisting new technology adoption and usage in Oromia Regional government bureaus
- ✓ To identify administrative challenges in resisting new technology adoption and usage in Oromia Regional government bureaus
- ✓ To identify employee challenges in resisting new technology adoption and usage in Oromia Regional government bureaus
- ✓ To develop conceptual frame work of the study that shows how variables are interrelated with each other.
- ✓ To develop strategies that used to guide to apply new technology adoption and usage in Oromia Regional government bureaus.

1.5. Significance of the study

This research will have the following significance or benefits for the oromia regional governments. It help the regional government easily identifies factors that influence new technology adoption and usage within the region and unlike in the previous the region adopt and use new technology without any resistance by following the proposed new technology adoption and usage strategy. Before new technology adoption and usage the region early solves all the factors stated as resisting factors and the new technology is successfully adopted and used. By successful new technology adoption and usage society that get service from the bureaus are serviced in quality manner, fairly and timely. There also, this research can help those interested to conduct a research on the area as a bench mark.

1.6. Scope and limitation of the study

This study is to focus on assessing the resistance of new technology adoption and usage in Oromia regional government bureaus. The researcher selected four Oromia regional government bureaus: Oromia information communication and technology authority, Oromia revenue authority, Oromia health bureaus, and Oromia public service and human resource management. Those bureaus were selected because they serve large number of customers daily which needs new technology to provide this service in effective, efficient and timely. Additionally those bureaus try to adopt and use new technology many times in the previous with relative to other bureaus, even if some challenges of unsuccessfully using it. These bureaus were found in Oromia capital city Finfinne around kera sarbet except Oromia public service and human resource management which is found at art kilo. The researcher focused on new technology adoption and usage in Oromia regional government bureaus by identifying challenges and factors that considered as resisting factors like employee, infrastructure and administrative. The study conducted from May 1/2021 to November 29/20121. There are also some limitations during conducting this study in the study area. As the part of data collection the researcher cannot collect data through document analysis, since there are no any new technology adoption and usage properly stored and managed documents. Additionally since there were no enough previously conducted research regarding new technology adoption and usage in this area the researcher forced to review most of its literature done out of our country.

1.8. Operational Definition of Terms

New technology: - Any developed or bought from commercial market application, software's or combination of both.

Adoption: - The act of accepting or starting to use new technology.

Technology Adoption: - Accepting or starting to use that new technology.

Resistance: - Ignoring or opposing

Usage: - Using or working with

Employee: - permanent workers of the bureaus.

Administrative: - Leaders or top management of bureaus

Infrastructure: - Hardware or software tools used to mobilize the new technology including networking system.

Chapter Two

2.1. Literature review

This chapter mainly focuses on a review of related literature on the study of resistance to new technology adoption and usage in an organization. The review starts from the definition of new technology, resistance to new technology, new technology adoption and usage, and factors of resistance to new technology adoption and usage.

2.1.1. Concept of new technology

The world is currently experiencing a period of rapid technological change that has been called 'the fourth industrial revolution'. New technologies are being developed which will fundamentally reshape government work force and change how government makes policy and delivers public services. The breadth and complexity of new technologies has created uncertainty about how they will be used, with many, often contradictory claims being made about their benefits and harms, such as the threats to privacy and the potential for governments to be more efficient (Government Digital Service, Technology innovation in government survey, 2017).

In some instance, these technologies will provide insights or perform tasks that were previously impossible. In other case, they will do things that were possible in principle, but impractical in reality due to the time or cost of using humans to perform these tasks. These technologies may also do things that people currently do, just with greater precision or speed. Government has always been shaped by advances in technology. For example, advances in communication, from the printing press to email have changed how governments organize themselves and interact with public they serve. In 2017 the government digital service (GDS) conducted a survey of technological innovation in a government. It identified five types of public sector innovation. Introducing new technology solutions into organizations can have substantial benefits for all stake holders, including greater productivity and profitability. However, unless this transition is carefully planned and adopted and used, organizations often experience employee resistance with a high potential to be counterproductive. These also broadly describe the types of change that new technology could bring within government such as service delivery, process speedup, rule and regulation, policies and technology that should be adopted by government. Forward looking government officials know that, in a digital society, "policy is the technology and technology is

the policy". Any government service delivered at scale is underpinned by a host of technologies. If the success of these business projects is compromised by poor adoption and usage of technology, then the political objectives are compromised too. Public sector leaders expect government chief information officers (CIOs) to find ways that technology can reduce costs, create efficiencies, and improve out comes for citizens and business. They also expect CIOs to consider the social, technological, economic, environmental and political trends that impact the constituent they serve (Susan, 2019).

To facilitate modernization and technology adoption, public sector organizations will increasingly look to digital platforms to allow new systems to be quickly developed and information shared between employees, agencies and citizens. By embracing the transition to digital platforms in 2021 and beyond, government can deliver effective, connected public services in a challenging time of heighted demand and shrinking budgets (Brian, 2021). Complex and sophisticated technologies (from medical technologies to predictive policing) have clearly changed what kind of services public sector organizations can deliver and how the public service delivery is organized (Pollitt, 2012). These authors define technological capacity as an ability to explore, develop and/or adapt new technological solutions in public service design, delivery and evaluation.

In that sense, they build on the earlier work on administrative capacities, which have understood as the delivery of tasks within a given framework of resources (human, financial, relational) and authority (reputation, coordination practices, politics). Increased life expectance, reduced crime rates, shortened service delivery time, increased legitimacy or trust of governments and similar positive added public values are often claimed to result from application of new technologies (Veiko et al., 2018). The introduction of new technology in an organization provides a number of benefits such as sustainable competitive advantage, lower production and labor costs. This in turn adds value to products and services, and generally improves the business processes (Nguyen et al., 2013). New digital technologies are rapidly changing the landscape for the delivery of public services. Mobile devices teamed with apps bring online public services to wherever the citizen is. Networked and Wi-Fi technologies enable the provision of information and collection of geo-coded data to be integrated with traditional administrative data, creating "big data" sets for building knowledge about populations and individuals. Automated administrative decision-

making processes are being expanded, with artificial intelligence (via machine learning) providing more nuanced ways to make decision within complex circumstances (Paul, 2020). The development of digital technologies and internet has had a remarkable impact, not only on the lives of individuals, but also on the organizational working and decision making process. Digital information technologies can facilitate the conversation of information collected in the organization and from specialized workers in it into organizational knowledge, by allowing global and updated communication, distribution of relevant content, and the sharing of work between workers, while transcending the limitations of time, place and specialties (Potter & Gittigan, 2013, Tsui & Malhotra, 2005).

As such, digital IT facilitate the generation of customer-tailored solutions and products in organizations and shorten the duration required to integrate these solutions and products into the market (Jackson, 2008). The type of digital applications that they use in their personal lives, namely, by the culture, communication methods, and commerce that are typical of the surrounding environment (Galvez et al., 2016). To extract the advantages of technological innovations, working process and organizational resources must be adjusted (Burge, 2014) such that the structure of the organization, its worker management and control methods, and its time and resource allocation all take advantage of technology (Chen, 2007).

The purpose of this study will be to conduct the ignorance against to new technology adoption and usage in oromia regional government bureaus. Bringing new technology and tools into your organization can increase productivity, boost sales, and help you make better, faster decisions. But getting every employee on board is often a challenge. What can you do to increase early and rapid adoption? How can you incentivize and reward employees who use it? And should you reprimand those who don’t (Rebecca, 2015). According to a study by management executive education, Sloan management review and capgemini consulting, the vast majority of managers believe that “achieving digital transformation is critical” to their organizations. However, 63% said the pace of technological change in their workplace is too slow, primarily due to a “lack of urgency” and poor communication about the strategic benefits of new tools. “Employees need to understand why (the new technology) is an improvement from what they had before,” says Didier Bonnet, coauthor of leading digital and global practice leader at Capgemini consulting, who worked on the research and coauthored the study.

2.1.2. New technology acceptance, adoption and usage

Organizations adopt information systems to increase efficiency. However, the full potential of these systems and thus the benefits for companies can only be exploited if they are actually used. Accordingly, extensive research has been conducted in recent decades to identify factors that predict the use of technology (Lisa et al., 2020). The acceptance of an information system generally refers to user's decision on whether they should buy or implement it and further use it in the long term, in the sense of active willingness and not only in the sense of reactive toleration (Arnold & Klee, 2016).

Over the past 30 years, many different models have been developed to describe and link peoples, systems, and contextual factors with potential impact on the acceptance of information systems. The technology acceptance model proposes that perceived ease of use and usefulness of technological tool determines the extent of consumer acceptance. The extent to which clinicians see mHealth tools enriching the existing doctor-patient interaction and communication influences referral of patients to electronic resources (Sinclair et al., 2013). It is significant to note that user acceptance and confidence are crucial for further development of any new technology (Taherdoost et al., 2013). In general, acceptance is defined as, "An antagonism to the term refusal and means the positive decision to use an innovation" (Alaeddin Kalantari, et al., 2012). On the other point of view, user acceptance is very important to the successful adoption and usage of any new technology (Taherdoost et al., 2012).

Additionally, it is significant to note that technology's features play a vital role in determining whether individuals involved in an activity will use it or not. Thus, understanding the users' perception towards adoption of new technology could help facilitate further growth of the adoption and usage of that particular technology (Taherdoost, 2017).

Thus, academicians and practitioners are interested to realize the factors that drive users' acceptance or rejection of new information technologies (Taherdoost & Masrom, 2009). Answering this question may help them to better methods for designing, evaluating and predicting the response of the users to the new technologies. In fact, a great technology and application might be designed and developed but if people do not get involve and do not use it, the project is failed, thus, user acceptance is an undeniable key of any further adoption and usage

and development of any technology and application . In other words, in order to increase the level of technology usage and user adoption, the emphasis on factors that can influence on user acceptance should be raised. Interaction between humans and technology is influenced by a number of social and psychological factors and characteristics (Taiwo & Downe, 2013).

Because of the complexities involved in predicting human behavior, research has generated a variety of theories and models to explain patterns of adoption and use of new technologies. Constant technological change simultaneously creates threats to establish business models, while also offering opportunities for novel service offerings (Lai, 2006; 2007; 2010; 2016). Leading firms often seek to shape the evolution of technological applications to their own advantage (Lovelock, 2001 & Lai, 2007).

Effective adoption and use of various technologies along with modern business process in private, public, and non-for-profit organizations are essential for them to become and remain successful enterprises. Rapid and significant technological changes and newer business models and process often make it difficult for managers to determine what new technologies to use and under what circumstances it is appropriate to adopt them. Effective use of various technologies in organizations is a key to success in this age of rapid technological innovation. Many of these technologies have created substantial and positive disruptions in organizational processes and operations. Some organizations have been struggling with these rapid technological disruptions. Managers are uncertain about when and under what conditions they should adopt a new technology (Rassule et al., 2020).

Information technology use in the workplace is common and widespread. In recent decades, new technology and systems have inundated most aspects of the business world, and the focus of technology, innovation, and knowledge has engaged the international business world (Andersson et al., 2016). Technological innovations can help users design, by, operate, make decision, and create knowledge within the business world (Baden & Haefliger, 2013). However, despite user advantage, resistance to technology can arise as a reaction to change and uncertainty (Ali et al., 2016). Employees use assorted technologies to facilitate their work but can resist using technologies (Ali et al., 2016). As a general the evolution of information and communication technology has brought drastic changes and development in several fields. The future life will

only be based on technology. Access to the internet today by several sectors has created a global market for internet service and has declined an increased productivity in the technological communication field.

2.1.3. Resistance to new technology

The introduction of a new information technology application within an organization represents change, and the acceptance of such change starts with the individual end users because they are the ones that may resist the newly introduce IT, due to fear of uncertainty or the complexity of the technology (Jiang et al., 2010). According to these authors the introduction of new technology within the organization start from the acceptance of the end users that more interacts or use the technology since the resistance also raised from them due to the fear of different factors like work condition change, environmental change and complexity of the new technology introduced itself. The rapid advances in technology and the changing of the communication channels have changed the way people work and, for many, where do they work from. Hence, it is not only the generation of new technologies, but also its diffusion throughout the economy which affects productivity growth at the macro-level. Pilat & Lee 2011, showed that to capture the benefits of ICT it is not necessary to dispose of an ICT producing sector.

Timely diffusion of new technology or, from the firm's point of view, its adoption is a key element to securing economic growth. Information and communication technology infrastructure plays a substantial role in catalyzing economic growth, especially in today's era of internet and mobile telecommunication (Lee & Brahmasrene, 2014). Information and communication technology infrastructure is a leading growth enabler in countries which have realized its importance. Employee resistance and low motivation to use new technology is a problem that continues to trouble business and educational organizations throughout the world (Ngafeeson, 2015). This author is concluded that employee resistance to new technology without geographical boundaries or across the world is the number one factor that challenge every organization without considering type, location, structure and its strategies.

A technology acceptance model was designed to include additional behavior constructs to develop further understanding of technology acceptance. Users continue to struggle with new technology because technologies are constantly changing and there is increased pressure on

employees to develop their skills so that their organizations can stay competitive. Meier et al., 2013 examined employee's resistance to change and their attitude toward the adoption of electronic record system in an organization. They found that fear of losing work autonomy, social influence, and perceived quality of information significantly influenced employee's resistance to change. These authors explained that the "technology acceptance model should be enhanced by introducing additional variables on the context of information communication technologies related to transformation".

Organizational tensions are not the only factor influencing technology acceptance. People's interpretations of new technology are formed from social aspects such as conversations with their coworkers or boss, as well as from direct experience with the new technology. Frist organizational members develop an interpretation of the new technology through social interactions (Leonardi, 2009). Before they even use the new technology they have a perception of what it should do. Then while individuals interact with the material features of the technology, they decide if their previous interpretation are supported or not (Leonardi, 2009). Both social interactions and material interactions play an important role in the process of interpretation formation.

Without considering all the factors that influence the success of technology adoption, many organizations have invested time and money into IT projects that resulted in limited success or even at times failure (Venkatesh & Bala, 2008). Choosing and successfully implementing new technology presents a challenge for organizations seeking criteria to predict if employees will utilize a new technology. Researchers recognize the need to address this "productivity paradox" in which there is a contradictory relationship between technology investment and organizational performance created by a lack of technology adoption by members (Venkatesh & Bala, 2008) by studying and developing theories to better understand why people accept or reject new technology.

In spite of all the benefits of using new technology, a large number of researchers attest to the fact that people have developed a resistance towards the use of modern technology in accessing information. Kim & KanKanhalli, 2009 identified resistance to information systems as a major reason for the failure of adoption of new technology. In the opinion of Siegel, 2008 resistance

and little incentive to utilize new technology pose a major difficulty that persists among many professionals all over the world. The technology acceptance model was invented to expand additional behavior constructs to increase the understanding of new technology.

Siegel, 2008 also holds that resistance to technology illustrates a reluctance to embrace an initiative, perception, idea and action or opposing untoward circumstances. Therefore, it is important for any organization to understand the reason for resistance by individuals in order to comprehend resistant behavior and find a way out. A possible solution is to offer appropriate instruction and training on the use of technology and application to real life situation geared towards overcoming the cause of resistance. Berna & Perez, 2012 observed that diverse cultural, technological, business and hierarchal levels can aid the adoption and rejection of new technology, however conclude that training can assist people in overcoming resistance to technology.

According to Rivard & Lapointe 2012, technology resistance has also been viewed as an essential issue in IT adoption and usage which, if not well managed, can lead to organizational problems. The two researchers suggested methods of response which are positive responses to the resistance: inaction, acknowledgement, rectification, and discussion.

In the opinion of Selvaganapathi & Raja 2012, fear of new technology is referred to as ‘technophobic’, which is a feeling of anxiety connected with the introduction to new technology. Those who are overwhelmed by a feeling of disaster or cognitive anxiety find it difficult to embrace the use of modern technology, which is common in the twenty-first century because of the popularity of technology applied to every aspect of human life.

Globalization, restricting and new technology developments in each and every sector has brought tremendous changes in all aspects of business and human lifestyles. One of the major changes that took place in business is change technology. Technology innovation or change has an important influence on organizational performance. There is a close relationship between technology change, human resource management and organizational performance. Change in technology has been identified to have both positive and negative effects on employees work performance and attitude (Mohammed, 2013). In general a public owned company decided to implement a technological project to make their services more effective. Changes were related to

a new information technology systems adoption and usage that will enable a number of major organizational changes such as changing work processes and practices. This effort faced many hurdles and especially resistance from employees. Resistance to change which means lack of support to a change project is a very well known cause of failure in change projects (Maria, 2017).

2.1.4. Why people resistance to new technology

Technology could improve work and work outcomes by simplifying work, automating tasks, and enabling business processes previously unimaginable. It has hence become an integral part of private and business life. However, convincing the potential benefits might be, there are many individuals not too inclined to adopt new solutions and reject new technologies (Bhattacherjee & Hikmet, 2007). Especially IT-induced organizational change projects show substantial failure rates as individuals do not behave and use technologies as initially expected (Venkatesh & Bala, 2008). While the use and application of technology has become near ubiquitous around the world, the actual adoption of new and emerging technologies across most organizations continues to be less than optimal.

Due to several barriers, technology adoption at an organizational level is often slow or even nonexistent. This keeps old legacy systems alive and hinders an organization from achieving its full potential efficiently (Frank & Gunjan , 2020).

2.1.5. Technology and knowledge acceptance and adaptation model

Recognizing the needs and acceptance of individuals is the beginning stage of any business and this understanding will be helpful to find the way of future development, thus academicians are interested to realize the factors that derive users' acceptance or rejection of technologies. A number of models and frame works have been developed to explain user adoption of new technologies and these models introduce factors that can affect the user acceptance. It is significant to note that user acceptance and confidence are crucial for the further development of any new technology. Besides, acceptance has been viewed as a function of user involvement in systems development (Hamed, 2017). This author argued that technology adaptation model is derived from theory of reasoned action. Due to uncertain theoretical and psychometric status in

theory of reasoning action model, technology acceptance model is eliminated user's subject norms and interestingly (Muk & Chung, 2015).

On the other point of view, user acceptance is very important to the successful adoption and usage of any new technology (Taherdoost et al., 2012). Additionally, it is significant to note that technology's features play a vital role in determining whether individuals involved in an activity will use it or not. Thus, understanding the user's perception towards adoption of new technology could help facilitate further growth of the adoption and usage of that particular technology. Thus, academicians and practitioners are interested to realize the factors that drive users' acceptance or rejection of new information technologies (Taherdoost, 2017, 2009, 2014). Technology acceptance model explains the motivation of users by three factors; perceived usefulness, perceived ease of use, and attitude towards. Therefore, not only behavioral intention will be contained in technology acceptance model but also, two chief beliefs like perceived usefulness and ease of use have considerable impact on attitude of the user. Technology acceptance also is influenced by usefulness. Perceived usefulness is determined by a user's belief that a type technology enhances job performance (Tarhini et al., 2015).

These can be determined as unfavorableness and favorableness toward the system. Sometimes, other factors known as external variables (user training, system characteristics, user participation in design and the adoption and usage process nature) are considered in technology acceptance model (Lin et al., 2011). Technology acceptance model is probably one of the most widely cited models in the field of technology acceptance (Wu, 2009). While technology acceptance model has been criticized on a number of grounds, it serves as a useful general framework and is consistent with a number of investigations into the factors that influence older adult's intention to use new technology (Braun, 2013). Knowledge is an essential asset for competitive advantage and business sustainability. Effective knowledge sharing should ensure that vital knowledge is retained and used within an organization but requires action by the recipient. The stickiness of this transfer depends on many factors (Szulanski, 2003).

Factors stimulating sharing may not be applicable to adoption, and recipients need to put more intention and effort into the sharing activity than do senders/providers. As new knowledge can engage its recipient in teach (Thompson et al., 2009) adoption needs sufficient stimulus to activate the mind's enthusiasm. Thus, motivating adoption is more difficult.

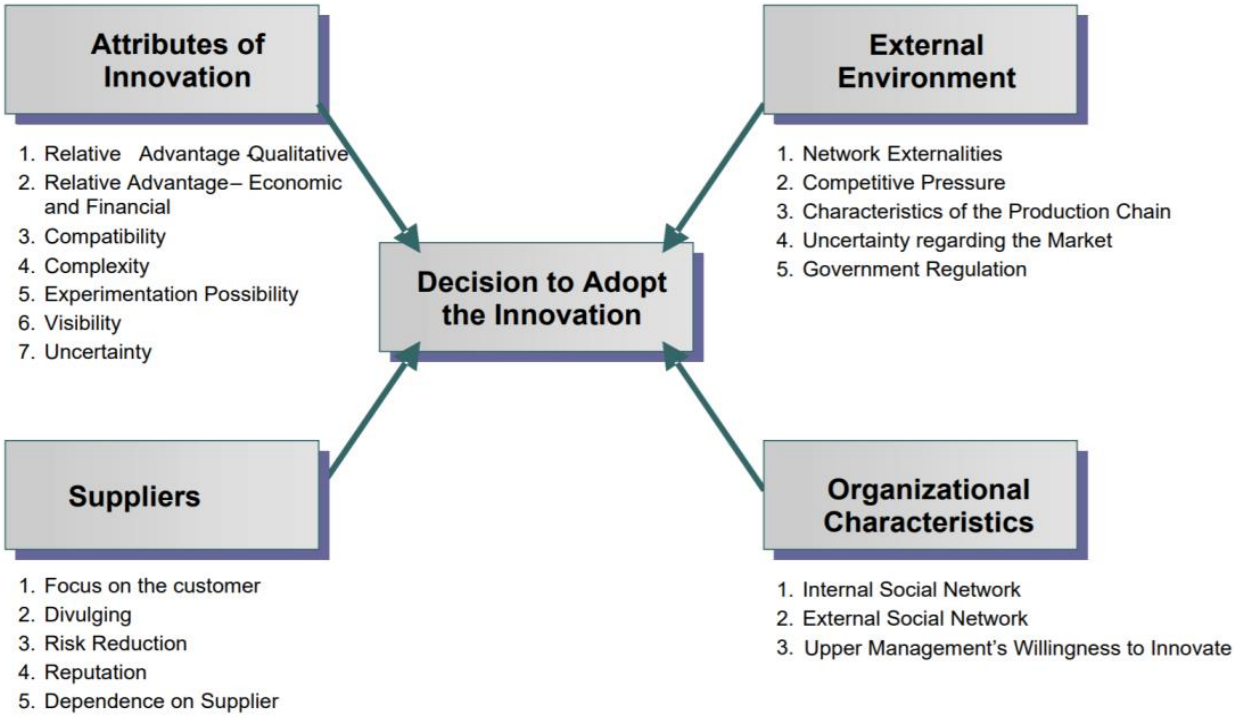


Figure2. 1 Technology adoption model frame work (Violoncellos, 2007).

2.1.6. New technology usage and adaptation strategies

Align technology and strategy.

Specific technology is often adopted and used because of the vendor and name recognition and not because it is necessarily the best solution to meet business needs, or achieve strategic goals. When choosing which technology to implement for your business, don't just weight the name of the vendor and the price. Take a look at your strategy. Think about how new technology will help you to achieve your strategic goals (Violoncellos, 2007).

Communicate for buy-in and engagement.

Achieving user adoption for new technology requires communicating with stakeholders early and often. Before you can communicate with stakeholders you need to have all your stakeholder groups identified (Violoncellos, 2007).

Perform a current systems analysis.

Technology upgrades or introducing new technologies carries a huge compatibility risk, what if the new system turn out not to be compatible with those you already have or integration requires more build time than was anticipated. To prevent system integration issues, make sure you review your current technology systems thoroughly before you consider deploying something new. Additionally, not everyone will learn and adapt to new technology in the same way. Consider offering multiple training methods electronic, classroom, smaller hands on training labs, various options ensure users feel most prepared (Violoncellos, 2007).

Develop training approach early.

One of the biggest risks to user adoption is lack of sufficient and customized training. Many vendors offer training options as part of your technology purchase, however, most of this training is standardized off the shelf and not specific to your business processes or culture. Training should not just be screenshots and power point. People need to see and play in the system, prior to go-live, in the context of their specific work processes (Violoncellos, 2007).

Integrate technology deployment with change management.

Many organizations are so focused on deployment and conversion, schedule and criteria that they fail to deploy and integrate a change management process for helping stakeholders adapt and adapt to technology. This is often one of the biggest reasons for rocky deployments, low adoption, and project failure. Technology only achieves desired goals if the people adopt it, if they don't; technology is just wasted money (Violoncellos, 2007).

Create an effective governance structure

Many technology deployments fail to establish an effective governance structure to lead and manage the deployment. Often project management and technology resources are assigned to govern the adoption and usage, but the voice of impacted stakeholders and even customers, is not represented (Violoncellos, 2007).

Monitor and course correct

Introducing new technology is likely to cause a major disruption to workflow. Monitor your deployment and consider whether the adoption and usage schedule may need to be revised into smaller more manageable stages. Provide stakeholders opportunities to offer feedback. New technology impacts everyone, so listening to stakeholder opinions and concerns and adjusting your deployment as needed, is important for achieving adoption (Violoncellos, 2007).

Make it people first

When implementing new technology, if you want to be successful you need to plan for, identify and address adoption and usage challenges early, and gain the buy-in and commitment for technology driving engagement, enhancing efficiencies and improving user adoption enabling you to maximize your return on investment. Otherwise, your technology is just an expensive tool that no one uses effectively (Violoncellos, 2007).

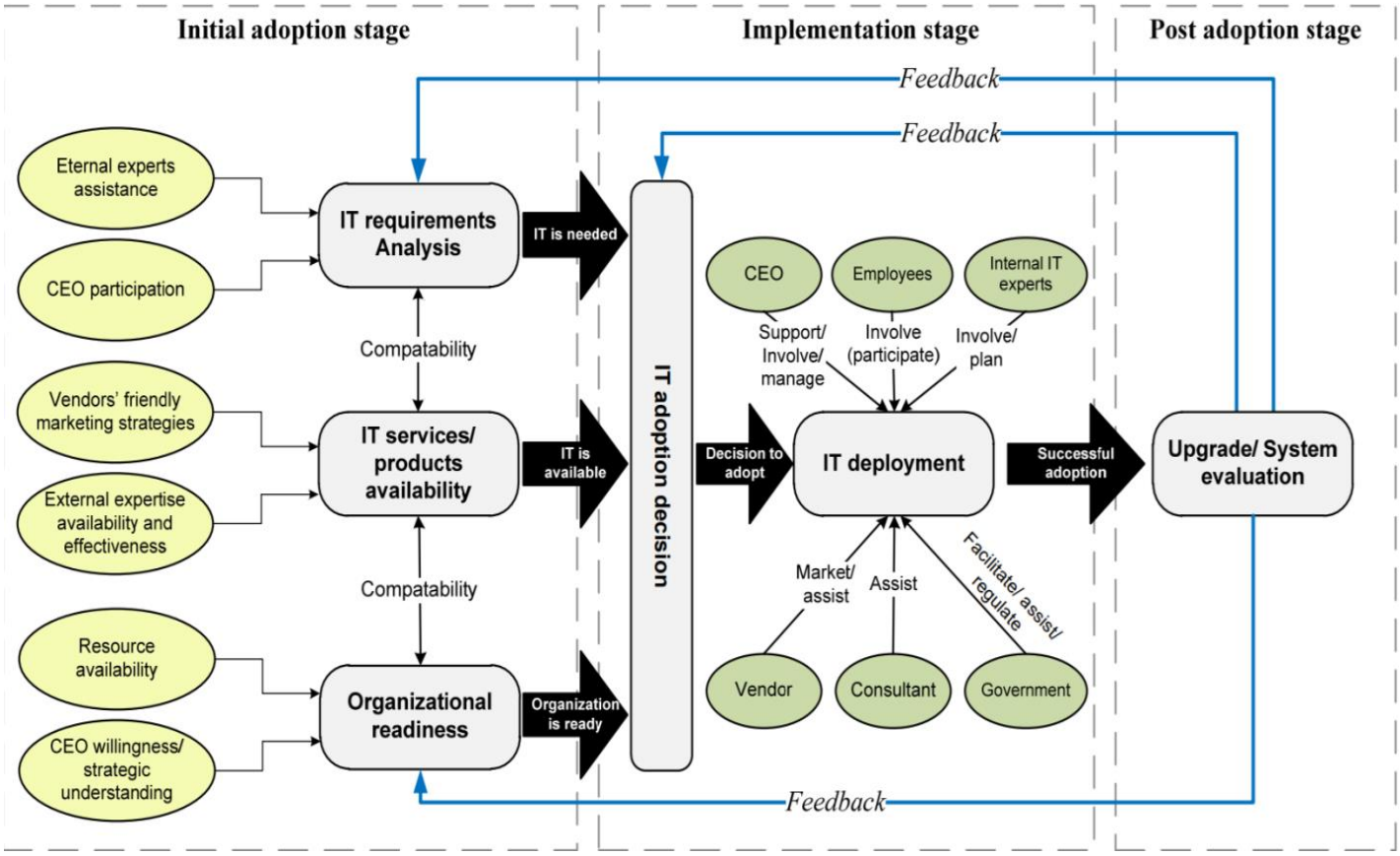


Figure2. 2 Conceptual model of effective IT adoption process strategies (Morteza, 2012)

2.2. Related work

Meseret, 2019 Conducted a research on challenges and prospects of using software products in Ethiopian higher educational institutions and suggested that organizational and environment problems/ challenges: (changing technology/ resistance to use new technology, organizational culture) most of the staff members in every department are not ready and welcome for new technologies. They resist when new technologies are introduced and there is a need to follow a scientific approach for selecting hardware and software as well as networking infrastructure with the help of experts.

Dan et al., 2017 conducted a research extending the technology acceptance model to improve usage and decrease resistance toward a new technology in higher education. By selecting four major departments as a participants, he try to demonstrate the relationship between variables of

motivation acceptance model and regression analysis was used to determine the relationship between variables of motivation acceptance model and suggested that perceived utility of new technology and user' attitudes toward new technology were statistically significant predictors of new technology use and that perceived ease of use also predicted weather the user found new technology useful. He discussed the most critical challenges faced by administrative is the adoption of new technology which significant amount of resources is spent.

Azza &Woollard, 2015 conducted a literature review how technology is accepted by users. By reviewing technology acceptance models and theories, the author's reviews different popular theories and models of technology acceptance model (TAM). They suggested that the original technology acceptance model was derived from the theory reasoned action and has extended to include factors of age, gender, prior experience, ability and etc. as their suggestion this also provides frame work to measure users perception of and intensions to use technology within and across organizations. Finally the authors concluded that the technology acceptance model frame work has and can be the basis of robust and developing models technology use in learning environment, but lack of considerations of human computer interface design in this wide range of applications suggests that a technology acceptance model that is sensitive to design issues is needed.

Dimitra et al., 2018 these authors conduct a survey across two universities to identify the factors that affect acceptance of new technology in the work place in order to understand better how end-users can influence the successful introduction of information technology. They used two universities and conduct cross analyses the difference between two universities and they found that users at both universities have high behavioral intention (BI) to use new technologies and there was no significant difference between the two universities, which meant these dimensions had no effect on the staff who worked at these universities. Finally the authors concluded that organizations invest huge amounts of money on new technologies in an effort to become more efficient, more competitive, and most importantly more profitable. However, a factor that often hinders the introduction and adoption of new technology in the work place is the resistance and attitude of the end users and the various employees who are supposed to use the new technologies.

Priyanka, 2012 conduct several literature reviews to provides an improvement on the technology acceptance model in the future trends. As the author suggests in the area of research to investigate the individual acceptance behavior on information technology and information systems, many models were suggested by the researchers. But finally the authors concluded that from these many models technology acceptance model (TAM) has been widely used to help understand and explain user behavior in an information system. There has been number of researchers which have been used to test the model and results have been reliable.

Rudra et al., (2018) conduct survey across country to investigate the relationship between information communication technology (ICT) infrastructure and economic growth with cause and effect evidenced by cross country panel data analysis. They examined that certain long-run relationships hypothesized to be present among per capital real gross domestic product (GDP), information and communication technology (ICT) infrastructure, consumer price index, labour force participation rate, and gross fixed capital formation manifest in G-20 countries recorded for the 2001-2012 period. They investigated that the relationships existing among information and communication technology infrastructure (both broad band and internet users), economic growth, consumer price index, labour force participation rate, and gross domestic fixed capital formation. Finally they found that the nature (positive or negative) and direction of casual relationship of the chosen variables broad band and internet users, economic growth, consumer price index, labour force participation rate, and gross domestic fixed capital formation.

Laura, 2018 he conduct his research on the influence of administrative support using new technologies on employees' perceptions of performance and creativity. The survey was conducted on employees from different departments and they asked about their experiences with administrative support using new technologies, their perceptions on job performance, job creativity and their intrinsic motivation to use new digital technologies. The results indicate that administrative support has a significant and positive effect on performance and creativity. These findings show researchers and practitioners the importance of administrative support on the performance and creativity of employees, when implementing new technologies. The author is recommended that future research is therefore needed to study which activities of administrative support has an impact and if these results are also applicable for other industries.

Chapter Three

3.1. Research Methodology

The study aimed at assessing resistance to new technology adoption and usage in oromia regional government bureaus. It was to find out the factors that contribute to the resistance of the new technology adoption and usage within the region and develop the strategy that used to apply new technology by eliminating or reducing those factors of resistance. In this chapter, therefore, the research methods that were employed to achieve the main objective of this study are discussed. They are research design, study site, study population, sampling techniques, sample size determination, data collection methods, sources of data, data collection procedure, data quality control, data analysis techniques, ethical consideration and pre-test of data collection instrument have been discussed.

3.1. Description of the Study Area

This study was conducted in Oromia regional government bureaus which are found in oromia regional state Finfine capital city in Ethiopia. The study was conducted in four selected regional government bureaus, Oromia Information Communication and technology Authority, Oromia Revenue authority, Oromia Health Bureaus which are found around kera sarbet and Oromia Public Service and Human Resource Management which is found around at arat kilo.

3.2. Research Design

This research focused on assessing the resistance of new technology adoption and usage in oromia regional government bureaus. The research method that used to conduct this study was descriptive research methods which includes both quantitative and qualitative data. Quantitative data was collected through questionnaire, qualitative data was collected through interview because the study is directed towards people, their opinions, attitude, behaviors and availability of equipment or infrastructure for the adoption and usage of new technology within the region. The method is selected because the nature of the problem needs wider description and detailed analysis of existing infrastructure with the intent of employing data to justify current condition.

3.3. Population of the study

The target population of study was permanent employees of four selected bureaus (Oromia Information Communication and technology Authority, Oromia Revenue authority, Oromia Health Bureaus and Oromia Public Service and Human Resource Management) which are 870 in number as Oromia public service and human resource management, 2013 shown in the table3.1 Below

Table3. 1 Name of the Bureaus and their Population Size

No	Name of bureaus	Population	Total population
1	Oromia Information Communication and technology Authority	170	**870**
2	Oromia Revenue authority	200	
3	Oromia Health Bureaus	300	
4	Oromia Public Service and Human Resource Management	200	

Source: Oromia public service and human resource management, 2013

3.5. Sample techniques and sample size

To conduct this research the researcher was used probability and non-probability techniques. From non-probability sampling techniques the researcher was used purposive sampling technique (judgmental) to select four bureaus from regional bureaus depend on their relative largest number of customers serviced from the regional bureaus and technology connection in their service delivery and administrative of the four bureaus three (3) from Oromia information communication and technology authority, four (4) from Oromia revenue authority, three (3) from Oromia health bureaus, and four (4) from Oromia public service and human resource management were participated for interview. From the probability techniques the researchers have used simple random sampling method to select the respondent from the purposively selected bureaus and stratified sampling method to proportionally allocate the samples for each bureau to group the respondents depending on their bureaus. The researcher was calculated the sample size of the total population using the following formula. The sample has been taken from the formula which is developed by (Kothari, 2004).

$$n = \frac{z^2 * p * q * N}{E^2 * (N-1) + z^2 * p * q}$$

Where:

N = total population

n = required sample size

z = confidence level at 95% (standard value of 1.96)

E = margin of error at 5% (standard value of 0.05)

P = population proportion at which the sample size is maximum (at p = 0.5 and p = 0.5, p*q = 0.25) sample sizing of four (4) classification of sectors population.

$n = N/1+N\ (e)^2$

Where:

n = sample size to be studied

N = population size

e = margin of error

$$n = \frac{1.96^2 * 0.5 * 0.5 * 870}{0.05^2 * (870-1) + 1.96^2 * 0.5 * 0.5}$$

$$n = \frac{835.548}{2.1725 + 0.9604}$$

$$n = \frac{835.548}{3.1329}$$

n = 266.70113952 which is approximately **267** respondent

To check the finite population correction (FPC) the researchers divides the determined sample size to the population. If the result is greater than 5% (i.e. n/N>5%N), FPC used to adjust the final sample size unless the required sample size can be accepted as it is (Kothari, 2004).

FPC formula : nf = n/(1+c)

Where C = n/N and nf = final sampling size

C=267/870=0.3, since the value of c is less than 5%, the researcher use the sample as it is.

Therefore, the researcher identifies that sample size for Oromia regional government bureaus which four bureaus selected purposively was 267. After a sample size of a population was determined, secondly the researcher was use stratified sampling method to proportionally allocate the samples for each bureaus total sample size of all bureaus were multiplied by the ratio population size of the proportional to the total sample size.

That is:

nh = (Nh/N)*n

Where:

nh = sample size for the proportion

Nh = the population size for the proportion

N = total population

n = total sample size, then

Oromia Information Communication and technology Authority stratified sample is

$$\frac{170}{870} * 267 = 52$$

Oromia Revenue Authority stratified sample is

$$\frac{200}{870} * 267 = 61$$

Oromia Health Bureau stratified sample is

$$\frac{300}{870} * 267 = 92$$

Oromia Public Service and Human Resource Management stratified sample is

$$\frac{200}{870} * 267 = 61$$

Table3. 2 Summarized Population and Samples Size

No	**Name of Bureaus**	**Total population**	**Samples**
1	Oromia Information Communication and technology Authority	170	52
2	Oromia Revenue Authority	200	61
3	Oromia Health Bureau	300	92

4	Oromia Public Service and Human Resource Management	200	61
Total		870	267

3.6. Sources of data

3.6.1. Primary sources of data

The primary source of data for this study was collected from employees through questionnaire and from administrative of four selected bureaus through interview.

3.6.2. Secondary sources of data

The secondary sources of data for the purpose of this study was collected from related articles, journals, websites and previously conducted similar researches on the area.

3.7. Data collection tools

To conduct the study the researcher systematically collected data from questionnaire and interviews. The questionnaires were created by using suitable questions modified from related researches and individual questions articulated by the researcher. Questionnaire and structured interview were employed as the major method to collect data from administrative and employees. This technique helped to get information that is not restricted or limited to the experience of the researcher. Positively, it also helped the respondents to be more open when sharing their experiences with the interviewers and questioners.

3.7.1. Questionnaire

As stated by (Roopa & Rani, 2017) questionnaire is a series of questions asked to individuals to obtain statistically useful information about a given topic. When correctly constructed and responsibly managed, questionnaires become a vital instrument by which statements can be made about specific groups or people. It is basically a list of printed questions that is completed by respondents to give their opinion. It is a valuable method of collecting a wide range of information from a large number of individuals, often raised to as respondents. For this study a close ended questions were prepared by the researcher and distributed for 267 in three separate parts, about the challenges of resistance to new technology adoption and usage in Oromia regional government bureaus from employees and administrative, and information about

infrastructure influences. Based on the core research questions, the questionnaire was prepared in English language.

3.7.2. Interview

Through this part of data collection tools, the researcher was used structured interview question to address from administrative selected from four bureaus about the status of previously integrated new technology, attitude toward them, factors that lead to the resistance of this new technology adoption and usage, the availability of infrastructure in the selected bureaus. The researcher was design interview to get supplementary information from the respondent. The data that was collected through interview should be analyzed using qualitative analysis.

3.8. Data Collection Procedure

The data for this research was collected using Questionnaire and interview. To collect data from the respondents, the researcher received official letter from Information science department requesting for help from institutions of all study sites of the study. Then to conduct the data collection, the researcher submitted permission letter to the institutions where the study embedded.

3.9. Data Quality Control

A brief orientation was given to the data collectors. The questionnaire was done at first time and necessary adjustments were done based on the feedback obtained during pre-test of data collection instrument. The completeness and consistency also checked at the site by the researcher. The missing data, outliers, completeness and consistence was checked before data analysis. This increased the validity of the research.

3.10. Techniques of Data Analysis

Data analysis is the procedure of taking arrangement and implication to the collected data. After the required amount of data received from the source of data, it needs to be organized. After all the necessary data was collected from the discussed source and by the discussed techniques the next step was the researcher have done is that analyzing the data that was collected by different method with different statistical tools. The quantitative data was keyed into computer and analyzed using the statistical package for social Science (SPSS) 20.0 version of the software and

the data were analyzed using both inferential and descriptive statistics by the researcher. The relevant data was coded, summarized and then interred in to SPSS and analyzed and presented.

Frequency table was used to summarize the respondent's profiles and their response in the form of frequency counts and percentages as needed as. Scores of availability of infrastructure was interred in to SPSS 20.0 software to compute descriptive statistics. Qualitative data was collected and analyzed by thematic analysis. This approach is used when a researcher try to find out about people's views, opinions, knowledge, experiences or values from a set of qualitative data and analyses and grouping them by their familiarity, code, generating themes, reviewing themes, defining and naming themes, and writing up and, also likert scale was used to measure attitudes and opinions of respondents which are ordinal in nature like strongly agree, agree, disagree and strongly disagree. Finally all these quantitative analyzed data was presented by tables, charts, bar-charts, pi-charts and different graphs to make them more clear in discussion.

3.11. Ethical Considerations

The officially written letter of permission from Jimma University, College of computing and information chair management was delivered to the selected bureaus. The researcher was provided orientation for data collectors and they insure respondents of confidentiality to provide accurate information relevant to the objective of the research. No minimizing or exaggerating of the demands of the research takes place and the researchers consequently have not misleading the involved participants about the benefits of the investigation. Among others the researcher was protect the right of respondents from harm, either emotional or physical when researcher posed questions or reporting the findings. Finally all data collected was only for the purpose of this research.

3.12. Pre-Test of Data Collection Instrument

The purpose of a pre-test exercise was to check consistency and validity of the data collection instruments. The pilot study was used to determine the feasibility of the study protocol and identify weakness of the study. The study has demonstrated the effectiveness of a pilot study in identifying flaws in questionnaire and interview. It has also provided better understanding of how to implement the data collection; the researcher provided occasional help with the questionnaire on employees from selected bureau of the study to check item completion. Pre-test

was set to check whether the questions were clear, appropriate, and if there were other questions that could be asked. It was conducted at four selected bureaus (Oromia Information Communication and technology Authority, Oromia revenue authority, Oromia Health Bureaus and Oromia public service and human resource management. Ten employees were chosen from each bureau to complete the pre-test. All respondents could return their test and appropriate amendments were then made properly on the basis of the findings of the pre-test.

Chapter Four

Results and Discussions

4.1. Results

4.1.1. Response Rate

This chapter deals with the results and discussions of the data analysis based on the research questions and objectives of the study. The data were gathered from four Oromia Regional government bureaus; Oromia information communication and technology authority, Oromia revenue authority, Oromia health bureaus, and Oromia public service and human resource management. They were obtained through, questionnaires and interview. Most of the questionnaires were self-administered; this was done to increase the quality of data collected and the response rate. Meeting respondents in person helped to better clarification, explanation of the objectives and importance of the research and so that they provide the actual information. The Total numbers of distributed questionnaires were 267 out of which 223 were filled and returned. These number shows that above 85.4 % were filled and returned. Those entire 223 questionnaires were filled properly and found appropriate for analysis. On interview question administrative from four selected bureaus; three (3) from Oromia information communication and technology authority, four (4) from Oromia revenue authority, three (3) from Oromia health bureaus, and four (4) from Oromia public service and human resource management were participated. Totally fourteen (14) interviewees were selected for interview and provided the required data for this study.

4.1.2. Demographic Characteristics of the Respondents

The participants of this study were administrative and employees from four purposively selected Oromia regional government bureaus; they were from Oromia Information Communication and Technology Authority, Oromia Revenue Authority, Oromia Health Bureaus and Oromia Public Service and Human Resource Management.

Table4. 1 Distribution of respondents according to their bureaus or office

No	Name of Bureaus	Total population	Samples	Percentage
1	Oromia Information Communication and technology Authority	170	52	20%
2	Oromia Revenue Authority	200	61	23%
3	Oromia Health Bureau	300	92	34%
4	Oromia Public Service and Human Resource Management	200	61	23%
Total		870	267	100%

As shown above in the table 4.1 the respondents of this study was 267 which is 92 (34%) of the population is from Oromia Health bureaus, 61 (23%) of the population is from Oromia Revenue Authority and Oromia Public Service and Human Resource Management and 52 (20%) is from Oromia Information Communication and technology Authority.

Table4. 2 Number of Distributed and Collected Questionnaire

No	Name of bureaus	Number of Questionnaires		Percentage
		Distributed	Collected	
1	Oromia Information Communication and Technology Authority	52	48	92%
2	Oromia Revenue Authority	61	49	88.5%
3	Oromia Health Bureaus	92	74	80%
4	Oromia Public Service and Human Resource Management	61	52	85%
Total		267	223	85.4%

Table4.2 shows that 92% of respondents from Oromia Information Communication and Technology Authority were filled and returned the distributed questionnaires, 80% of respondents from Oromia Revenue Authority were filled and returned the distributed questionnaires, 80% of respondents from Oromia Health Bureaus were filled and returned the distributed questionnaires and 85% of respondents from Oromia Public Service and Human

Resource Management were filled and returned the distributed questionnaires. Totally from 267 selected respondents 223 (85.4%) properly completed and returned the questionnaires and analyzed for the result.

1. Sex Distribution of the Respondents

As it is shown in the table4.3 below, the majority of the respondents from the four bureaus in gender 182 (81.2%) were male and the rest 42 (18.8%) were female. From table4.3 below it is concluded that males are more appropriate to adopt and use new technology than female. The standard deviation also shows that there were a great deference between the values (98.3) and the expected value. Ananya & Dutta, 2016 conduct a literature review and concluded that in the context of usage Information Technology which includes computers, email services, electronic data management systems etc., gender acts as an influencing factor in technology adoption as men are found to be more technologically adept compared to women. In generally in new technology adoption and usage men's were more comfortable than women.

Table4. 3 Distribution of respondents by sex

Gender	Frequency	percent	Mean	SD
Male	181	81.2%	111.5	98.3
Female	42	18.8%		
Total	223	100%		

2. Age distribution of respondent

As shown from the table4.4 below respondents were grouped according to their ages which have five subgroups. The first group which is less than 25 years is holds 6 respondents from the whole by 2.7% and is the least one. From 25 to 30 age group was 40 and holds from the whole 18.4%. The third one which is from 35 to 40 is 36 which hold 16.1% from the whole and it is the third least one. The fourth group 30 to 35 which covers 52 and holds 23.3% is the second largest group of all. The last group and the largest of whole 89 and holds 39.9% from the whole and it is elder of all the aging range and considered as one factor of technology resistance. As seen from the table4.4 below the SD of the age reveals to 30.04 which is greater than the expected value. This shows that the older the most resistance new technology adoption and usage. This is due to

different factors like visual impairments, hearing limitation, reading difficulty or others. Older people are generally less inclined to use modern technology. Some older people might not see the ways technology could benefit them, especially if they have never used the internet or a smartphone before (josh, 2021). In general in new technology adoption and usage, the youngest the age, the most adopt and use than older.

Table4. 4 age distribution of respondents

Age

Range	Frequency	Percent	Mean	SD
Less than 25	6	2.7		
25 - 30	40	18.4		
30 - 35	52	23.3	44.6	30.04
35 - 40	36	16.1		
Greater than 40	89	39.9		
Total	223	100.0		

3. Education level distribution of respondents

As shown in the table4.5. The majority of respondent's education level is fall under degree level which covers 163 respondents from total and 73.1% in percent. The second one is above degree level or MSc and PhD which share 60 respondents from the whole and 26.9% in percent. As presented on questionnaire material there were no respondents that fill out high school certificate and diploma level of education mean that both were have zero figures and cannot showed on the table.

Table4. 5 education level distribution of respondents

Education level	Frequency	Percent
Degree	163	73.1%
Higher Degree (MSc or PhD)	60	26.9%
Total	223	100%

4. Experience of the respondents

As presented in the table4.6 below respondents work experience with in the current office were categorized under four groups which is less than two years of experience that have 18 respondents and hold 8.1% with the first least group. Secondly from two years to five years which include 42 respondents and the second least group by 18.8% of the total respondents and from five years to 10 years of experience with 72 respondents and hold 32.3% of the whole respondents and the second largest one, finally 91 respondents were fall under above 10 years of experience and holds 40.8% of the whole respondents. Those two largest groups were very crucial for the researcher in collecting real data about the new technology adoption and usage and provide deep information about related infrastructure since the experience is only in their current office rather than the general experience since there may be a transfer of employee from one office to another office.

Table4. 6. Distribution of respondents according to their experience

Experience	Frequency	Percent
Less than2 years	18	8.1%
2-5 years	42	18.8%
5-10 years	72	32.3%
Greater than 10 years	91	40.8%
Total	223	100%

4.1.3. Employee Related Challenges in Resisting New Technology Adoption and usage

1. Impacts of new technology on employees job opportunity.

In every bureaus or office either government or private employees were the first and most body that work the job or business activity of that bureaus or office. In a rapidly growing to days technology immersed in a government office business activity, employees were the body that is directly or in directly affected by the adoption and use new technology. Obviously new technology is the automation or computerization of job performed through human power or in a manual way either in software, hardware or in the form of both. But rather than its benefits in a such manner many times it have seen, there is a negative attitude against the adoption and use of

new technology in a government bureaus or office of oromia regional government. Therefore the respondents were asked to explain about their attitude against new technology adoption and usage impacts on their job opportunity in the office or bureaus and the results of their responses were presented and analyzed as below.

Table4. 7 Impacts of New Technology on Employees Job opportunity

Items	Frequency	Percent
Eliminate Opportunity	40	18%
Create Opportunity	170	76%
No impact	13	6%
Total	223	100%

As shown in table4.7. above, few employees, 13 (6%) replied that they consider as the adoption and use of new technology into their bureaus or office have no impacts on their job opportunity and only 40 (18%) respondents replied that adoption and use of new technology into their bureaus or office were eliminate their job opportunity. This can be concluded that those small in numbers employees were considering the integration of new technology into their bureaus or office as it eliminates their job opportunity. This can be logically come from the concept that technology can replace human power or resource in doing activity or jobs of every kind. But the truth behind is that technology can simplify and speedup the way the work is done rather than completely replaced human power or resource, so clarifying this concept for employees were change the direction of this attitude. More than have 170 (76%) of the respondents about the adoption and use of new technology into their bureaus or office have the attitude that it's create their job opportunity. This shows that employees were agree with the adoption and usage of new technology into their bureaus or office even if different factors like infrastructure, lack of professional knowledge or skill and necessary training of new technology. Providing the above listed factors can reduce the employee resistance to new technology adoption and usage within the regional bureaus. Since the majority of these employee agree with the adoption and usage of new technology can create their job opportunity the region have the responsibility to provide necessary infrastructure, training and etc., fort its employee.

2. Employees training or skill gap updating before adoption and usage of new technology.

Employee Training or skill gap updating is the act of preparing or making ready someone for something that is new for a particular environment. In new technology adoption and usage the first and most important is that making end users ready to accept the new technology that will going to be adopted and used. This can be simplifying the adoption and usage process and make that technology successful. In there were no trained and skilled employees or human resource and not ready for the adoption and usage of new technology for bureaus or office the budget that is invested were useless and, that new technology will fail immediately without giving the purpose of adoption and usage. So before adoption and usage of any new technology it is important to prepare employee or human resource that has a great responsibility in accepting the technology by providing necessary training and skill gap updating.

Table4. 8 Training or skill updating adoption and usage of new technology

No	**Training or skill updating before adoption and usage of new technology**	Frequency	Percent
1	Yes	29	13%
2	No	194	87%
Total		223	100%

Table4.8. above shows that the preparation of employees or bureaus or office human resource by providing necessary training and skill updating before any adoption and usage of new technology. But as seen from the employee response frequency, it is possible to say there was no training or skill updating is given for the bureaus or office employee or human resource before adopting and using new technology into bureaus or office work or services that employee work with it. In a very large number the respondent's response shows that they were no trained or improve their skill to accept new technology before adopting and using it. Out of 223 respondents 194 or 87% were those not get any training and skill update before new technology adoption and usage while few of them means 29 or 13% were a positive response in their bureaus or office. But this is very challenging and contradicting with the rapidly growing and adoption and usage of new technology within government organization. The major factors that employee resist new technology adoption and usage was lack of knowledge or awareness about

that new technology. Employee cannot accept or work with it what they do not know. So the bureaus or office have the responsibility to provide necessary training and skill gap updating for its employee concerning new technology adopted and used.

3. Participation of employees during new technology adoption and usage into bureaus or office.

Table4. 9 Employee participation or involvement during new technology adoption and usage

No	Employee participation during new technology adoption and usage	Frequency	Percent
1	Yes	89	40%
2	No	134	60%
Total		223	100%

New technology adoption and usage is the process or procedure of installing or customizing new technology for a specific job that is new for a particular environment for the first time. In doing such jobs many times, this job is done only by the professionals and a group of higher management teams. As shown in the table4.9 60% of employee responded that they were not participated or involved in any adoption and usage of new technology to the bureaus or office during the process. But after such new technology is adopted and used most jobs that will going to be done with the adopted and used new technology were the work of employees. But if employees were not involved or participated during adoption and usage processes it is very challenging to perform their job that is done through new technology adopted and used.

Employees have understand and participate in every new technology adoption and usage process to fix a problem after they start their work with it and perform their job without any fear that come from technical error during the job process. Additionally they consolidate sense of confidence to do with the new technology and, if there is a problem or technical problem with the system they solve by their self without waiting professionals and work cutoff. Additionally if employees were involved during new technology adoption and usage the degree of resisting that new technology also reduced. Employees cannot accept completely what they do not know. In order to overcome all these, the bureaus or office have involve or participate employee during

new technology adoption and usage process rather than only management team and professionals.

4. New technology adoption and usage steps or procedure

One of the main reasons why many organizations fail in new technology adoption and usage is lack of a proper planning. They can't just expect employees to take on the challenge of adopting and using a new tool into their workflow. Adopting and using new technology has a significant impact on how your employees work thus, you should consider their opinions. (Emily Roner, 2019). In the same case as seen from the table4.10 below which shows the respondents response to new technology adoption and usage steps or procedures with respect to Oromia regional government bureaus majority of them mean, out of 223 respondent's 183 (87%) shows that there is no new technology adoption and usage steps or procedures during the process and very few of them 40 (17.9%) agree with the idea. This shows that in adopting and using new technology the bureaus have no work flow that guide to do the adoption and usage steps and procedures. Lack of such step or procedure make the office confusion by unknowing where to start and where to finish the project and finally fall in a project Failer. New technology adoption and usage steps or procedure has different stages and criteria which we will see in the proposed frame work later. If there were no adoption and usage guide line the adoption and usage cannot go on a track and unknowingly fail at some stage. Considering this challenge the bureaus or office have use new technology adoption and usage frame work or procedure to save itself from failure.

Table4. 10 New technology adoption and usage steps or procedure

No	Are there clearly defined new technology adoption and usage steps or procedures	Frequency	Percentage
1	Yes	40	17.9%
2	No	183	82%
Total		223	100%

5. Employee opinions about how new technology adoption and usage improve their job performance

New technology adoption and usages have the ability to improve how individuals go about their daily activities. This includes how they complete tasks or daily activity around their work environment. New technology related to communications can help employees perform their jobs to the best of their ability. For employees with the ability to grasp new technology, it can speed up their productivity. New technology can help employees communicate in a more efficient manner, get answers and help immediately. This allows them to solve problems and address issues in the workplace. It has positive impact on the relationships between employers and employees, employees and administrative, technology professionals and administrative. As shown from the above table4.11, even if different bottlenecks of new technology adoption and usage were in their bureaus or office 148 (66%) respondents were strongly agree with the adoption and usage of new technology can improve their job performance. This shows that employee's attitude to new technology adoption and usage is a positive on the improving their performance, but different influences were make employee to resist new technology like infrastructure, administrative and some social factors from employees. Around 75 (34%) also agree with the idea of new technology improve their work performance.

Table4. 11 How new technology improves employee performance

No	Do you think that can the adoption and usage of new technology improve your job performance	Frequency	Percentage
1	Yes	148	66%
2	No	75	34%
Total		223	100%

4.1.4. General information about Employee Related Challenges in Resisting New Technology Adoption and usage

The information about the challenges of new technology adoption and usage in the regional government bureaus was determined through the bureaus employee opinions or perspective and compared and contrasted with each other to determine or identify the degree of which problem or challenge is the serous one as shown below in the table4.12.

Table4. 12 Deals with general information about the challenges of employee against new technology adoption and usage

No	Item	Yes		No	
1	Training or skill updating before adoption and usage of new technology	F	%	F	%
		29	13%	194	87%
2	Employee participation during new technology adoption and usage	89	40%	134	60%
3	Are there clearly defined new technology adoption and usage steps or procedures	40	17.9%	183	82%

Table 4.12 deals with general information about the challenges of employee resistance to new technology adoption and usage in Oromia regional government bureaus. According to the first item or challenges which means employee training or skill updating before new technology adoption and usage out of the total 194 (87%) respondents are responded that before any new technology adoption and usage they were no trained or skill gap update given for them concerning that new technology and from the whole challenges it is the highest or the major challenge when compared with the rest one. The second one is about the presence of new technology adoption and usage steps or procedure that used to simplify the employee adoption and usage to ward new technology and in the major one mean out of all 183 (82%) respondents response shows that there were no clearly defined new technology adoption and usage steps or procedure and this one also next to employee training and skill updating in challenging new technology adoption and usage within the regional bureaus. The third one is about the challenges that come from lack of employee participation during new technology adoption and usage during the process and take the third position by out of all 134 (60%) have not responded that they cannot participated or involved during new technology adoption and usage within the bureaus. The last two points were employee opinions against new technology adoption and usage in either create or eliminate their job opportunity and most of them or out of all 170 (76%) were positively responded that after new technology is adopted and used and they adopt and use accordingly it increases or create job opportunity for them. The last point that out of all 148 (60%) responded strongly agree is how new technology increase or improve employees job

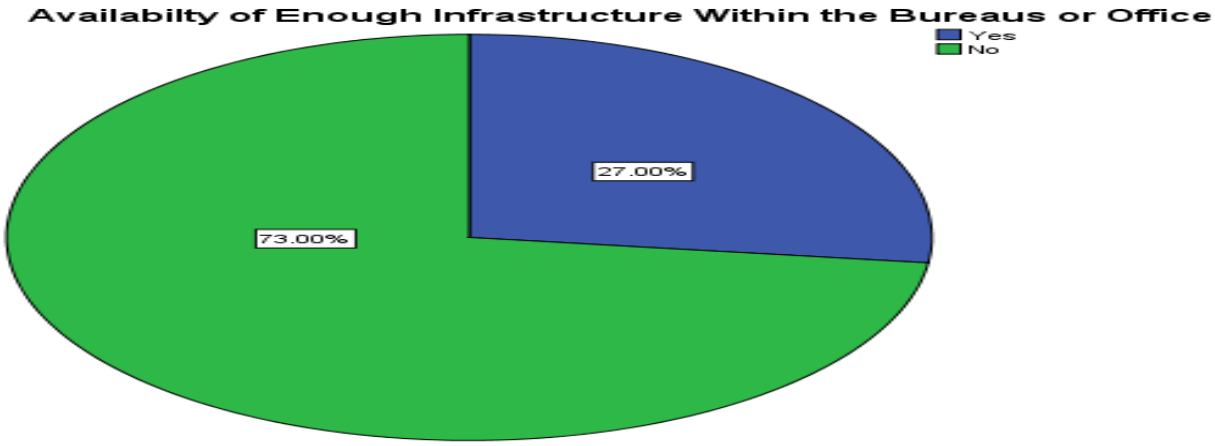
performance. Even there were challenges in new technology adoption and usage, the bureaus employee have very positive or strongly agree with this concept.

4.1.5. Infrastructure Factor in Resistance to New Technology Adoption and usage

1. Information about Availability of Infrastructure within the Bureaus or Office.

The information presented on the below figure4.1 shows that the availability of infrastructure within their bureaus or office. As seen from their response majority of the respondents 168 (73%) expressed that currently there were no enough infrastructure within their office that made them to access new technology and small in number 55 (27%) out of the whole were responded that they have enough infrastructure in their office to access new technology. Infrastructure is the main element of new technology adoption and usage. Without enough, quality and accessible infrastructure speaking about new technology is meaningless. Rather than itself infrastructure is also the main reason of resistance from employees. If the availability and quality of infrastructure is below than expected with respect to new technology that will going to be adopted and used employee cannot accept that new technology since they challenged with the inadequacy of the infrastructure. Before adopting and using every new technology it is a responsibility of the bureaus or office to improve the quality, availability and accessibility of infrastructure in order to adopt and use the new technology successfully. As (Andrew & Birnbaum, 2020) concluded, all firms require technology. When technology becomes complex and sophisticated, it is built on bedrock of preexisting technical and scientific knowledge that forms a necessary, rudimentary infrastructure for any business activity. Therefore the way that a firm approaches technology, and the way it builds technology into its strategy, requires that key decision makers understand the nature of its technological environment and the level of development of the technological infrastructure.

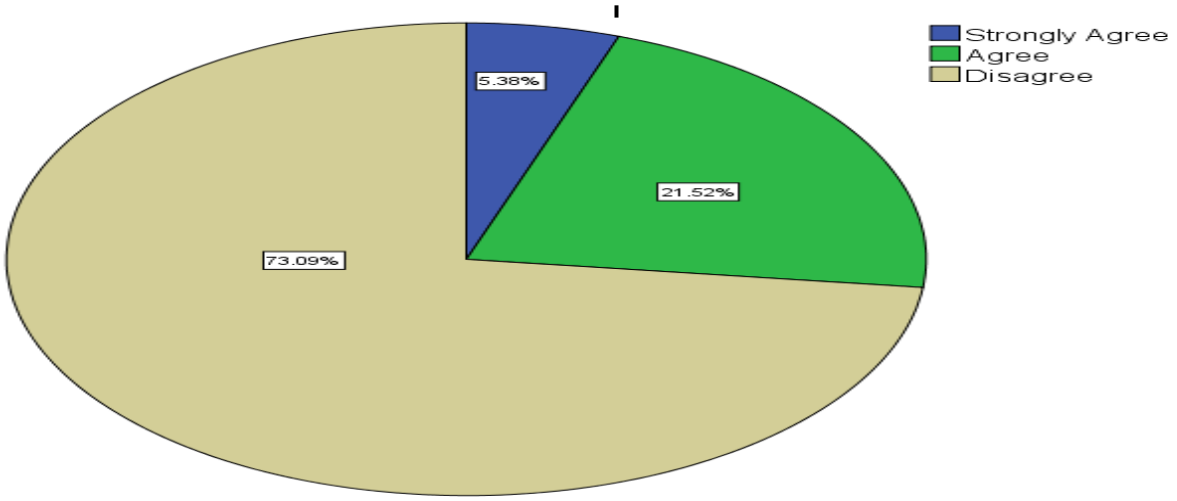
Figure4. 1 bureaus or office infrastructure availability



2. Information about the status of current infrastructure within the bureaus or office

Next to the availability of infrastructure within the bureaus or office, the information presented in the figure4.2 below shows that about the currently configured infrastructure sufficiency to adopt and use new technology within the bureaus or office. As seen from the respondents response frequency 163 (73.1%) were disagree with the sufficiency of the currently configured infrastructure to adopt and use new technology within their bureaus or office. 48 (21.5%) were agree that the currently configured infrastructures were enough or sufficient and 12 (5.4%) were strongly agree with the sufficiency of currently configured infrastructure within their bureaus or office, And none of them were not responded with neutral or unresponsiveness. From the above point of view before adopting and using new technology the bureaus or office should have to update or upgrade the currently configured infrastructure that match with the new technology that will going to be adopted and used or configure new infrastructure as much as possible.

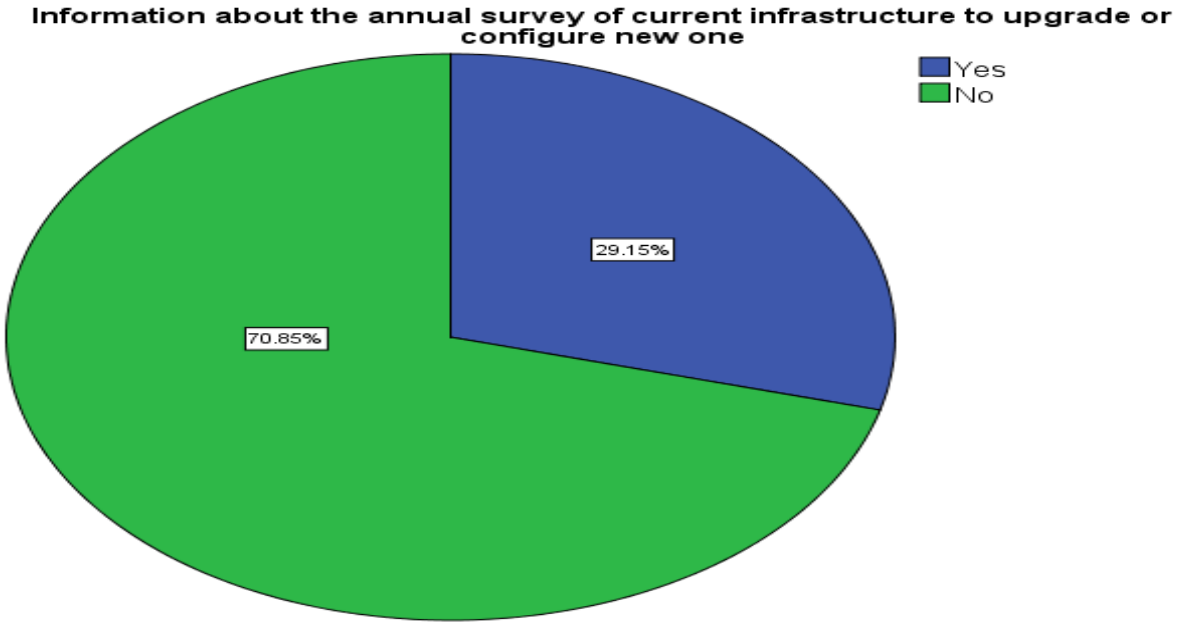
Figure4. 2 Information about the status of current infrastructure within the bureaus or office



3. Information about the annual survey of current infrastructure to upgrade or re-configuration the new one.

The third point that the researcher is try to identify is that the annual survey of bureaus or office infrastructure to upgrade the outdated one and configure the new one to run with the changing technology. This one also presented in the figure4.3 below and shows that more than half 158 (70.9%) of the respondents were responded that there is no annually held infrastructure survey within their bureaus or office that used to identify the outdated infrastructure and replace or configure the new (upgraded) one. 65 (29.1%) out of the whole participants were responded that within their office there were an annual survey of infrastructure that used to identify the outdated infrastructure and used to upgrade or replace with the new one. Infrastructure survey is nothing but it is process of making annual inventory of infrastructure and record the status of the infrastructure. In doing so the bureaus have an able to identify the infrastructure that is working and not working and which needs to be upgrading and completely replacing. If bureaus or office held likely infrastructure survey every annual it is possible to know its infrastructure current status and easy to adopt and use new technology at every time.

Figure4. 3 Information about the annual survey of current infrastructure

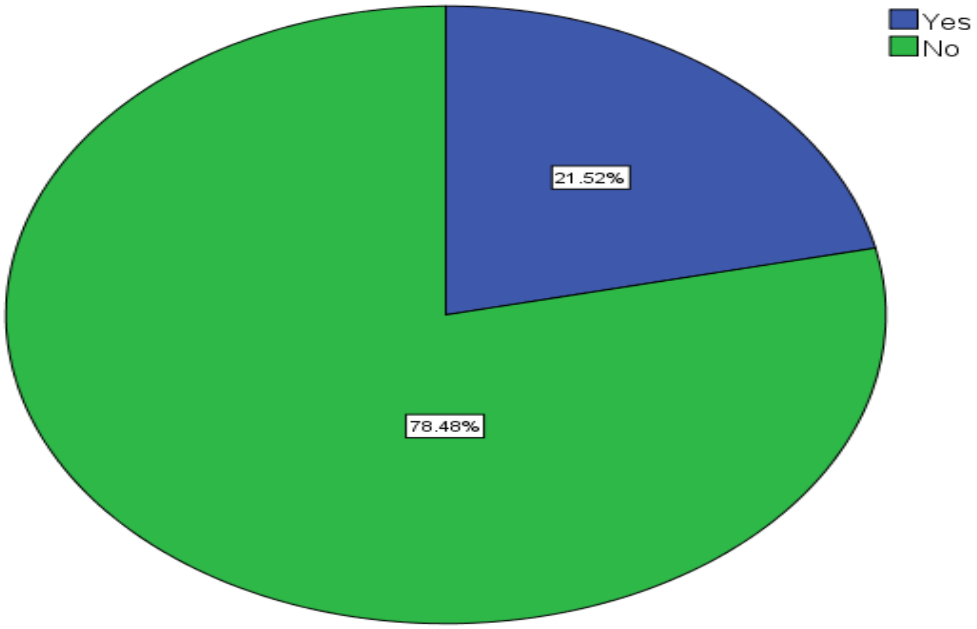


4. Information about the quality of bureaus or office infrastructure.

The fourth point is that the quality of infrastructure within the bureaus or office. As shown from the figure4.4 below the majority of the respondents 175 (78.5%) were not satisfied with the quality of infrastructure to adopt and use new technology within their bureaus or office. Very few in numbers with respect to the total respondents 48 (21.5%) were show their response that the current infrastructure quality is enough or appropriate to adopt and use new technology within the office or bureaus.

Even there were a huge amount of infrastructure within the organization the big question behind is the quality or the standard of that infrastructure to fit or ability to run the new technology that will going to be adopted and used. Many new technology adoption and usages were fails due to mis-match between the quality of infrastructure and the capacity of the new technology that have been adopted and used. Adopting and using such technology needs not only the mass of infrastructures rather, making align between the new technology and infrastructure quality that fit the standard of the new technology is the major work of the bureaus or office that host the new technology. In the same way depend on the respondent's response that seen from the figure4.4 below resistance to new technology adoption and usage the quality or standard of infrastructure is less than expected, so the bureaus have to improve the quality of infrastructure to adopt and use new technology successfully.

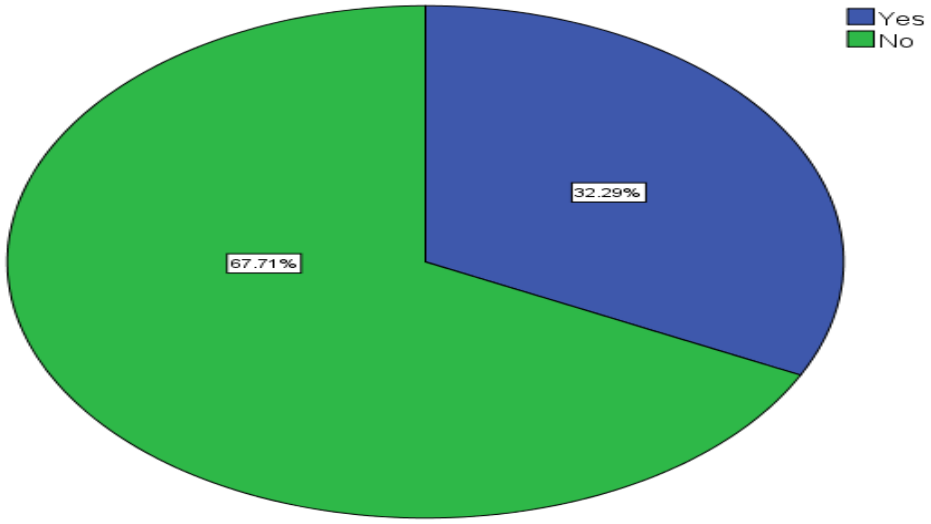
Figure4. 4 Information about the quality of infrastructure



5. Information about the accessibility of infrastructure within the bureaus or office

The final point that was discussed was the accessibility of infrastructure at everywhere and every time within the bureaus or office. As shown on figure4.5 below more than half of the total respondents 151 (67.7%) have replied that the bureaus or office infrastructures cannot available and accessible at everywhere and every time and 72 (32.3%) were replied their response that the bureaus or office infrastructure can available and accessible at everywhere and every time. These can be concluded that the majority of respondents or employees of the bureaus or office have not access at any time and any place the bureaus or office new technology infrastructure to do their job or give their service to increase their performance by saving human resource, time and increased quality of their activity. When we can say accessibility it's the ability to bureaus or office infrastructure accessible 24/7 (twenty four hour per day and seven days per week), thus at every time and everywhere the service should have accessible.

Figure4. 5 Information about the accessibility of infrastructure



4.1.6. General information about infrastructure factors of new technology adoption and usage

The information about the factors of resistance to new technology adoption and usage in the regional government bureaus was determined through the bureaus infrastructure assessment and compared and contrasted with each other to determine or identify the degree of which factors is the serous one as shown below in the table4.13

Table4.13 General information about infrastructure in new technology adoption and usage within the bureaus

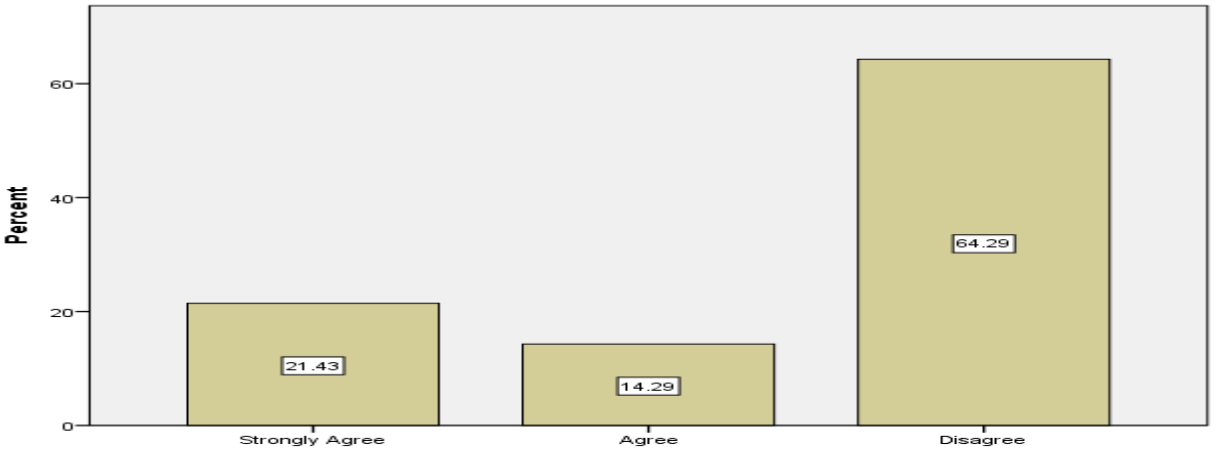
No	Item	Yes		No	
1	Availability of Infrastructure within the Bureaus or Office	F	%	F	%
		55	27%	168	73%
2	Information about the quality of bureaus or office infrastructure	48	21.5%	175	78.5%
3	Information about the accessibility of infrastructure within the bureaus or office	72	32.3%	151	67.7%
4	Annual survey of current infrastructure to upgrade or re-configuration the new one	65	29.1%	158	70.9%.

As shown above in the table4.13 all factors that was considered as infrastructure were presented accordingly and from all the factors of resistance as seen from the respondents response the quality of infrastructure within the bureaus was take the lion share in resisting new technology adoption and usage by out of all 175 (78.5) of them were not positive against the quality of infrastructure they use. The second major resistance factor was the insufficiency or scarcity of infrastructure which holds 163 (73.09) out of all respondents was not agree with the idea that the available infrastructure is not enough to adopt and use new technology within their bureaus. The third major resistance factors of the infrastructure that out of all 168 (73%) of respondents show their response not available to adopt and use new technology within the bureaus. And the fourth and fifth were deals with about the bureaus annual survey against its infrastructure and 158 (70.9%) not positive with the idea and the last was about the accessibility of infrastructure of the bureaus and which out of all 151 (67.7%) respondents response shows that the bureaus infrastructure have not been accessible at wherever and whenever.

4.1.7. Administrative challenges in resisting new technology adoption and usage

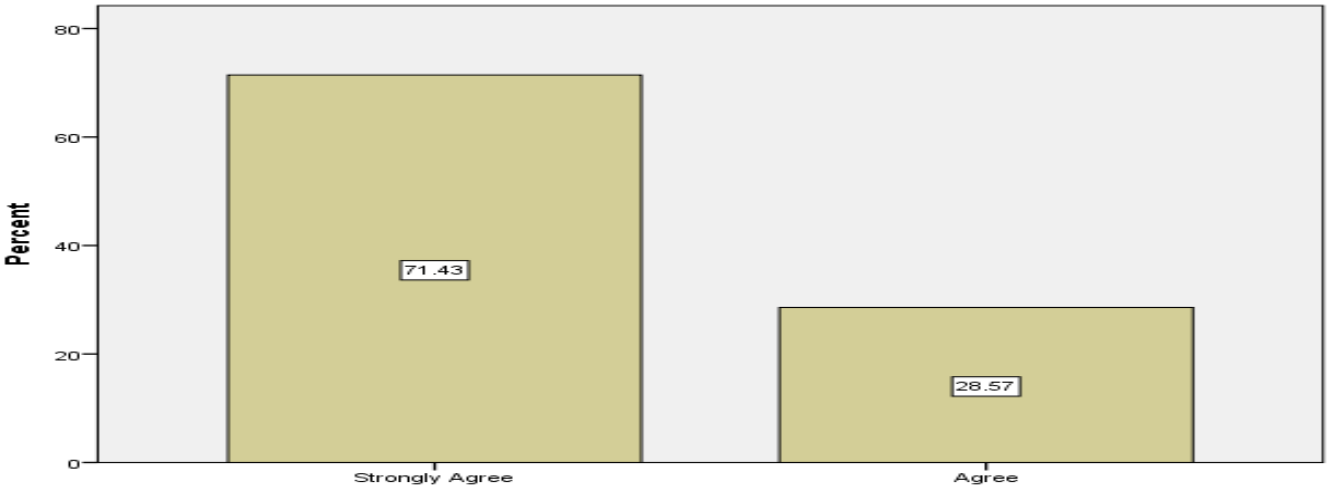
As shown from on the figure4.6 below majority of the administrative of the bureaus or office 9 (64.3%) reflected that adoption and usage of new technology in to their bureaus or office cannot influence or impact their power or control within their bureaus or office. Some of them 3 (21.4%) were strongly agree as the adoption and usage of new technology to their bureaus or office can impact or influence their power or control and few of them 2 (14.3%) were agree with the adoption and usage of new technology can impact or influence their power or control. This can be concluded that adoption and usage of new technology can be improve the way administrative can lead and control the bureaus or office of the region by simplifying the way of communication of employees and administrative, share and transfer information between each other, solve work related problems and support and follow up. So rather than impact or influence the power or control of the administrative, adoption and usage of new technology within oromia regional government bureaus or office can simplify and speed up the way of management and the way work have been done.

Figure4. 6 Influence of new technology on administrative power or control



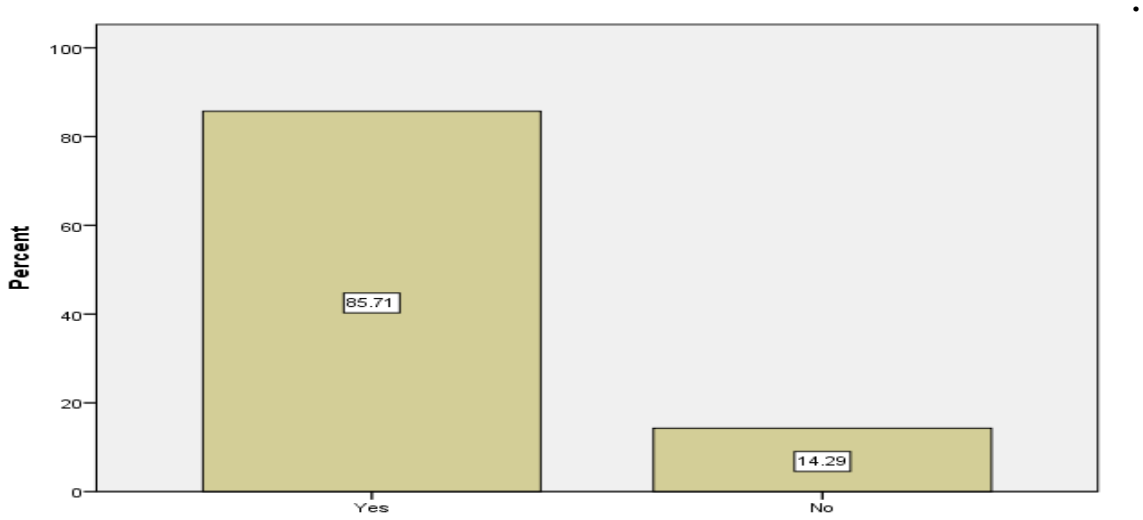
As shown from the figure4.7. selected administrative from four bureaus or office have responded about the adoption and usage of new technology to their bureaus or office can put extra work, time and responsibility on them and most of them 10 (71.4%) have strongly agree and 4 (28.6%) of them also agree with idea. from this we have concluded that in adopting and using new technology the regional bureaus or office administrative have understand that, if new technology is adopted and used or introduced to their bureaus or office, it gives additional extra work, time and responsibility that make them work overload and busy them than normal working condition. But the reality that those administrative should have understand is that the adoption and usage of new technology can save human power, time and minimize work over load and responsibility by technology based work and management styles of the bureaus or office. So there was a skill gap that understanding a new technology in such a way is the main point to be discussed and have been solved.

Figure4. 7 New technology adoption and usage extra work, time and responsibility on administrative



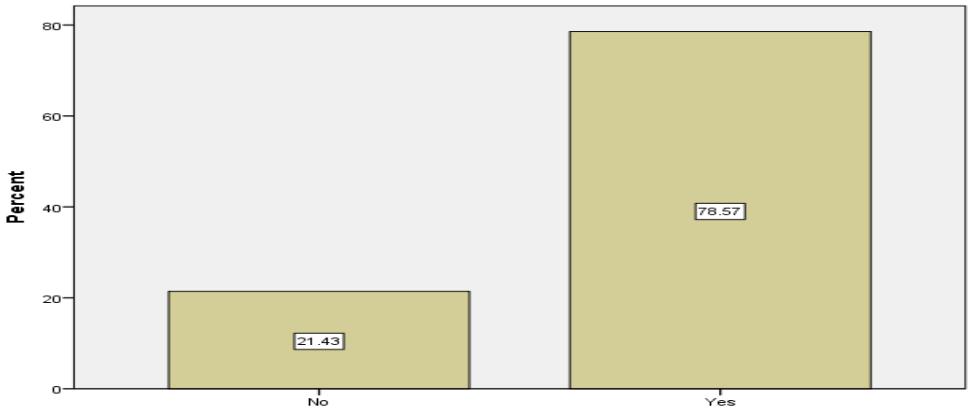
New technology adoption and usage is a huge investment that needs budget, human resource and time. Technology may appear to be expensive at the adoption and usage stage, but may save money in the long-term, particularly where a low-cost technological solution can be found to replace a high-cost, low-tech application. Election management bodies (EMBs) need to weigh the costs and savings associated with introducing technology. These include the initial costs of purchasing hardware and software, the hiring of consultants to set up the new system and ongoing maintenance and management costs (Granville A, 2021). As this author concludes the initial adoption and usage of new technology may be needs high amount of costs, but after adoption and usage the technology may be save time, money and human power than its cost. The other point that the authors point out is that carefully selecting new technology that is adopted and used with a little costs and save more resources is the responsibility of new technology election management bodies. As seen from the figure4.8 85% of administrative of the four bureaus were agree with the concept of adoption and usage of new technology to their bureaus put heavy amount of cost than ever. Generally from the above statement we concluded that new technology is adopted and used with high cost and save a cost than adoption and usage cost and during new technology adoption and usage we should have carefully select technology that is less cost to adopt and use, that save more resource.

Figure4. 8 adoption and usage of new technology put heavy amount of cost than ever to the bureaus or office.



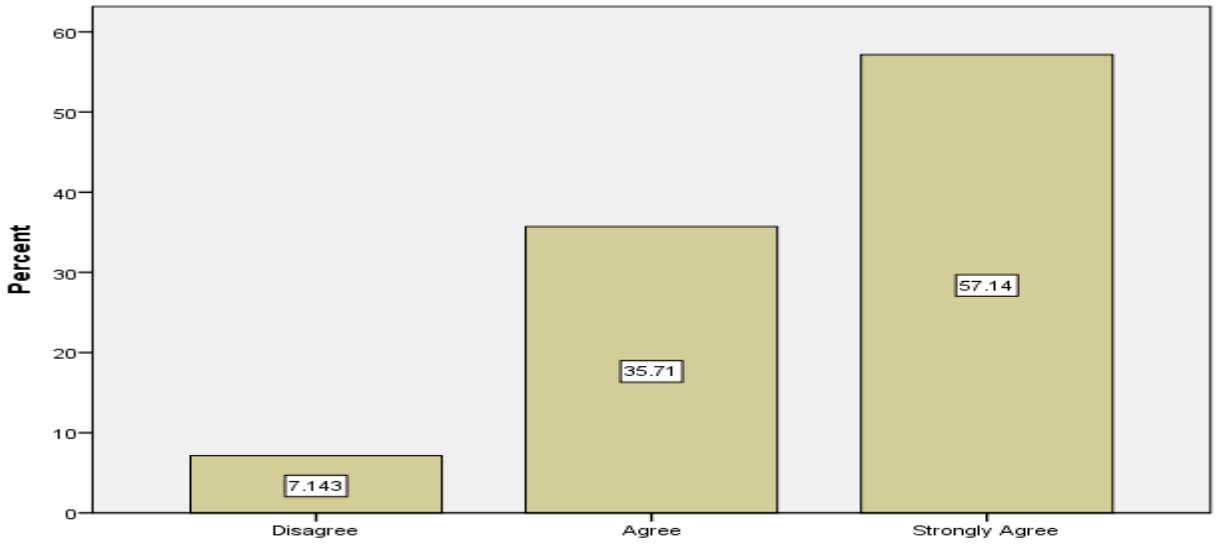
As shown in employee questionaries' response 87% of them were responded that they have not trained before any new technology adoption and usage to ready to accept that new technology. Similarly in selected administrative interviewee all of them agreed that, when annually the work plan is prepared in their bureaus employee training schedule have been included and due to different problems this training cannot given for employees as schedule as. In the same in this administrative response 78.57% of them were agree about the employee training schedule preparation in annual plan of the bureaus. So the bureaus should have provided this training for employees as much as possible depend on the schedule.

Figure4. 9 Including Employee Training Schedule during the Preparation of Bureaus annual plan



Employee participation during new technology adoption and usage is the involvement of employee through the initial stage to post adoption and usage stage of new technology adoption and usage process. Employee simple accept what they know rather than what they don't know. As seen in employee questionaries' majority of them were responded that they were not participated or involved during new technology adoption and usage and the process were done by management team and professional experts. Here administrative agree with necessity of employee participation during new technology adoption and usage. But it is not important that only agreeing employee participation during new technology adoption and usage rather by reality involving or let them to participate is the solution. Most of administrative or 57% is responded that employee participation is necessary, but what really in the bureaus were contradicting with this idea and administrative should have the responsibility to involve or participating employees during new technology adoption and usage of the office as presented on the proposed conceptual frame work by the researcher.

Figure4. 10 The necessity of employee participation during new technology adoption and usage



4.1.8. General information about administrative in new technology adoption and usage

Under this information only one resistance factor from administrative was discussed because since the rest of all were responded in a positive idea. Here the factor that holds the first place from the side of administrative in resisting new technology adoption and usage was about the fear of administrative put on them extra time, work and responsibility. As shown in the figure 4.8 in which 85% of administrative were agreed with the idea that they considers new technology adoption and usage have put extra time, work and responsibility than their normal working condition.

4.2. Conceptual Frame Work of the Study

A conceptual framework is a written or visual representation of an expected relationship between variables. Variables are simply the characteristics or properties that you want to study. The conceptual framework is generally developed based on a literature review of existing studies and theories about the topic (Bas Swaen, 2015).

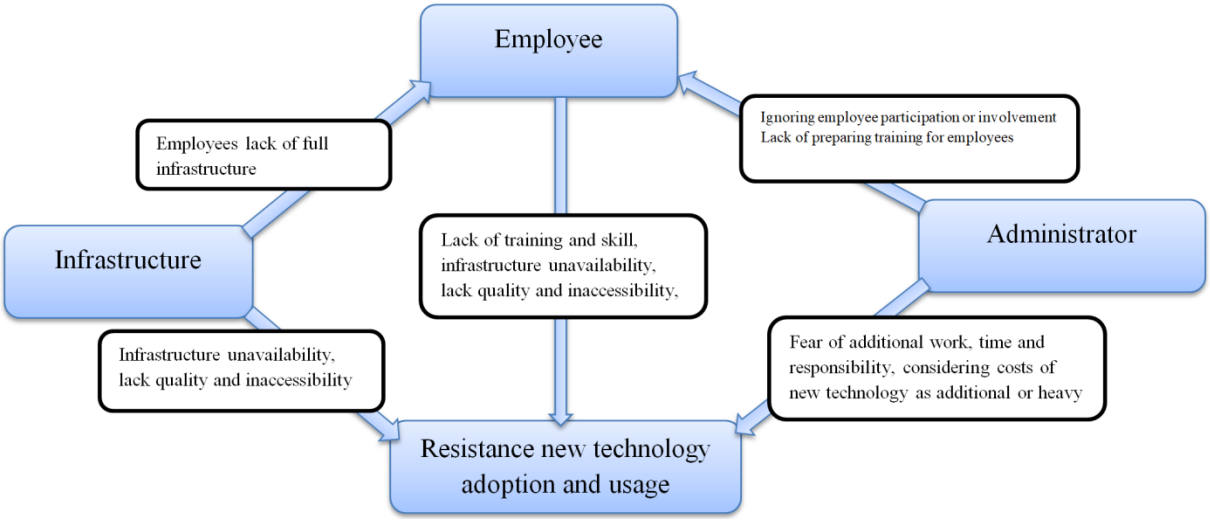


Figure4. 11 conceptual frame work of the study (derived from Violoncellos, 2007)

1. Infrastructure

As discussed in the literature review or in chapter two of this study infrastructure has a positive influence on the new technology adoption and usage. Availability, accessibility and quality of infrastructure are a major contributor to the adoption and usage of new technology. To adopt a new technology weather in the form of hardware, software and both, the first and best is investing on the availability and quality of infrastructure is the most jobs. Improving the quality and availability of the infrastructure cannot enough; also after the availability and quality of the infrastructure is approved making its functioning is also another problem of new technology adoption and usage. In most organization with the full of high quality and availability of infrastructure, making this infrastructure on or functioning is another problem. As the results of this study shows from infrastructure questionaries' the extent of infrastructure availability, quality and accessibility is very low and unsatisfied. As the response of respondents shows from the total 73.1% of respondents were responded the unavailability, of infrastructure within their

bureaus. In the same way the respondents were responded in terms of infrastructure quality and accessibility, from the total of respondents 78.5% and 67.7% were responded the quality and accessibility of their bureaus infrastructure was very low and inaccessible wherever and whenever respectively.

Additionally infrastructure can also have a contribution to another resistance factor like employees. As presented on the above conceptual framework of the study, infrastructure have a bi-directional influence which is direct influence by itself on new technology adoption and usage and influencing employee to resist new technology adoption and usage. If the infrastructure within their bureaus have not enough to adopt and use new technology employee can resist new technology. Infrastructure improvement in availability, quality and accessibility is the key requirements during new technology adoption and usage. If infrastructure is improved it is possible to say two problems were solved at once which is infrastructure factors and employee challenges due to lack of full infrastructure in new technology adoption and usage.

2. **Employees**

Employee can resist new technology adoption and usage for several factors and influences. From the results of this study employee lack of training and skill gap update concerning new technology adoption and usage was take a lion share which in employees questionnaire parts 87% of the respondents responded that they have no any training or skill gap updating before new technology adoption and usage. As discussed above another factor that considered as employee resisting new technology adoption and usage is that lack of fully integrated infrastructure within their bureaus. In addition to the above reason of employee resistance to new technology adoption and usage, the other influence is the administrators of their bureaus. Administrators can one big reason of employee resisting new technology adoption and usage. Before adopting and using any new technology there must be a training and skill gap updating for employees which is arranged by administrators and top management teams of the bureaus. But the bureaus administrators have ignore the job as shown in the results that shows 87% of employees cannot trained or get skill gap update to accept new technology to their bureaus. At the end there is also employee participation or involvement during new technology adoption and usage process which is done by administrator arranging the way. But the result shows that 60%

of the respondents were responded that they have not get the chance to participate or communicated during new technology adoption and usage to their bureaus. In order to adopt and use new technology employee training and skill gap updating before new technology adoption and usage, involving or participating employees during new technology adoption and usage are a bench mark of successful new technology adoption and usage. Without employee knowledge and participation in new technology adoption and usage administrators only cannot possible to complete the task to the successful point. Administrators should have arranged and prepare necessary training before new technology adoption and usage, and widen the chance of employee involvement or participation during the process of new technology adoption and usage.

3. Administrator

At the final there are also huge resistances from an administrative or what we have called leaders of the bureaus in multiple directions. Since administrative always considered as a picture of their organization the whole activity or process of the organization is the responsibility of them. Administrative is responsible for establishing policies, guidelines and strategic objectives, as well as for providing leadership and direction for quality management within the organization. It should also establish those responsible and hold them accountable for a wide variety of management system processes. Holding all these responsibilities enforce administrative to resist new technology adoption and usage to their bureaus. As the result of this research found out 71% of administrators resist new technology because of, they consider new technology adoption and usage to their bureaus as extra time, responsibility and work. But the time, work and responsibility needed during new technology adoption and usage to the bureaus is a normal work, time and responsibility of the administrators of the bureaus rather than considered as extra or additional. The other one is the cost that is expended to adopt and use new technology to the bureaus, as the result shows 87% of administrators of the bureaus have considered that the cost of new technology adoption and usage as extra cost or heavy cost of the bureaus. The administrators should have considers all necessary cost during new technology adoption and usage as regular cost of their bureaus budget.

In general as the result of this study shows there were infrastructure factors of availability, quality and inaccessibility in new technology adoption and usage, employees' challenges of lack

of training and skill before new technology adoption and usage, lack of full infrastructure, lack of chance to participate during new technology adoption and usage process, administrators considerations of new technology adoption and usage time, responsibility and work as extra time, responsibility and work, fear of new technology adoption and usage cost as extra or huge cost were the main concept of this conceptual frame work. Since this conceptual frame work is developed depend on the finding and results of this study.

4.2.1. User validation of developed conceptual frame work of the study

After the finding and results of the study the researcher was developed a study frame work and try to validate by preparing some validation check list for the user and the feedback from the user was analyzed as follows. The researcher prepare six validation checklists or questions concerning about the developed frame work of the study and distributes for thirty users and they were responded by reading the frame work and understand it. As shown in the table4.14 below all most all users responded with strongly agrees and agrees in some extent from the presented alternative view of their response. Depend on their responses rate the general average of their response those responded in strongly agree were 80% out of all and 20% out of all were responded agree with the validation criteria of the developed frame work of the study. From this result it is possible to say that the developed frame work of the study is validated for this study depend on the result of user validation results.

Table4. 14 conceptual frame work of the study validation check list

No	Check list	Strongly agree		Agree		Dis agree		Strongly disagr	
		F	%	F	%	F	%	F	%
1	Is this frame work is easy to understand?	21	70	9	30	0	0	0	
2	Does the frame work have contribution to understand new technology adoption and usage resistance?	19	63	11	37	0	0	0	0
3	Is the relationship of the variable of this frame work is easy understandable?	27	90	3	10	0	0	0	0
4	Either any complexity or difficulty in their	25	83	5	17	0	0	0	0

	hierarchy of variables								
5	Is the influence of independent variable on one another is clear to understand	22	73	8	27	0	0	0	0
6	Kindly recommend if any improvements on this frame work from your point of view	30	100	0	0	0	0	0	0

4.3. Analysis of Qualitative Data

The qualitative data of this study were collected through interview and analyzed as follows.

4.3.1. Analysis of Data Collected through Interview

An interview was administered with 14 administrative from four bureaus or office (: Oromia information communication and technology authority three (3) interviewee, Oromia revenue authority four (4) interviewee, Oromia health bureaus three (3) interviewee and Oromia public service and human resource management four (4) interviewee) were provided with a semi structured interview to clearly put their opinion on the new technology adoption and usage within their bureaus or office. There are several issues from administrative had raised and the results have been discussed as follows.

The first point they were asked was about how they prepare or make ready their bureaus employee or human resource before adoption and usage any new technology by providing different training and skill gap updating in order to successfully implement that new technology. The four bureaus (Oromia information communication and technology authority, Oromia revenue authority, Oromia health bureaus and Oromia public service and human resource management) were agreed that before any new technology adoption and usage there must be acceptance of the bureaus or office employee or human resource is the key element.

In doing so the bureaus or office have prepare and include employee training schedule in annual plan and provide necessary logistics of the training and held the training as scheduled as. But as we have seen in the employee questionnaire parts a very large number of respondents responded that they have not trained nor get any skill updating before the adoption and usage of bureaus or office new technology. Similarly the four bureaus or office administrative has agreed on the employee response and there were a bureaus or office training schedule concerning new technology adoption and usage included in the annual plan, but because of different problems like budget, work overload and time shortage the training have not given as scheduled as.

In addition to employee or human resource training and skill updating of the bureaus or office, the administrative were responded about their bureaus or office infrastructure availability, quality and accessibility. The four bureaus or office administrative also share common idea about these

three criteria to reply to their office infrastructure. As stated in the employee response in the employee questionnaire parts the availability, quality and accessibility of bureaus or office infrastructure were shows that in its very low level. To implement or setup any new technology the most and first things that a bureaus or office should have been consider were infrastructure that used to mobilize the new technology to be adopted and used.

If there were not enough, qualitative and accessible infrastructure is, there will be nothing to speak about the adoption and usage of new technology. The bureaus or office administrative reply was share employee response and they discuss their response about infrastructure classifying in to two places namely: internal infrastructure and external infrastructure. Concerning internal infrastructure they discusses about infrastructure those bought from market like different network devices, office machine and different related equipment's. As their response basically internal infrastructure problems raised from the government proclamation that many times these infrastructures were bought by purchasing department of financial directorate rather than ICT professionals. The purchasing department asks ICT professionals for specification but many times they bought this equipment in a very high cost without that specification and the needed quality. These make many infrastructures useless, not accessible and outdated in a very short period of time.

Externally they responded that as anybody knows the major thing that make new technology accessible in the bureaus or office is that continues availability of internet access. Obviously till recent time the federal democratic republic of Ethiopian government internet service provider were the only government body which is owned by the ethio-telecom. Since this organization is directly controlled by federal government it is very challenging to get the service as needed as. Additionally infrastructure that is in this side were installed, configured and bought only by the experts of the ethio telecom with high costs and there is a service cutoff at any time because of different political situation. All these discussed above were infrastructure challenges within the bureaus or office in adoption and usage new technology successfully.

Similar to the above discussion about the office internet access which is controlled and provided by the ethio-telecom all the Oromia regional government bureaus get the service only in this direction and it is uniform for all bureaus and office. As they replied the access is available for

all employees when it is available and not available when it is cut off for all since this service is only controlled by federal government many times the government have cutoff the service due to the country's political crisis and rarely some natural and human disasters.

In the availability of computer with the internet access for employees in order to perform their daily job, they replied that starting from information desk employee to the administrative all have at least desk top computer with either wireless or wired internet access to do their daily job. But there were some challenges related to computer skill from some employees and the bureaus or offices have helped them in improving their skill by providing basic computer skill training.

In terms of resistance from employees when bureaus or office implement new technology the four bureaus administrative who participated in the interview was share the same idea and responded similarly. They said that, there is a resistance from employees but the level of their resistance was varied depending on employee's professional backgrounds. Those employees with a technology related background were more comfortable in accepting new technology than others, but there is common reasons that those have a technology background and those not have a technology background share which is infrastructure that we have discussed deeply in the questionnaire parts. As they raised the availability, quality and accessibility of infrastructure is a main challenge that influence employees to resist the adoption and usage of the bureaus new technology.

In case of employee participation during new technology adoption and usage, they responded that during new technology adoption and usage employee cannot directly participate in the process rather bureaus management team and some IT professionals were participated and then after employees were discussed through a management team which is selected from each directorate of the bureaus. This shows that adoption and usage of new technology in to the bureaus is the only decision of administrative and management team. This is what deeply discussed in the employee questionnaire parts which major employee answered similarly and is the main reason of new technology resistance and the reason of failure. Employee participation and communication during new technology adoption and usage into the bureaus is the parts of the strategies that have been developed and recommended for the region in successfully adoption

and usage new technology since the main actor of that adopted and used new technology were employee itself.

4.4. Developed Strategies for Successful adoption and usage of New Technology in the Oromia Regional Government Bureaus.

Goal of the strategy

After this strategy is adopted and used successfully seeing successful new technology adoption and usage within the regional bureaus.

Objective of the strategy

The main objective of this developed strategy was aimed at successful adoption and usage of new technology in Oromia regional government by following all steps and stages discussed below under all necessary listed pillars.

Over view of the strategy

Technology has become a critical tool in every business, which helps to maintain competitive advantage. Changes to technology often impact your employees, as many aren't willing to accept the change with open arms. By adoption and usage technology training and explaining the usefulness of the tools for both the business and their workflows can have a huge impact on your success. Implement strategies to make it easy to understand these tools, increase employee productivity and help your employee embrace the new technology. The contribution of new technology to economic growth can only be realized when and if the new technology is widely adopted and used. Adoption itself results from a series of individual decision to begin using the new technology, decisions which are often the result of a comparison of the uncertain benefits of the new technology with the uncertain costs of adopting it. An understanding of the factors affecting this choice is essential both for economists studying the determinants of growth and for the creators and producers of such technologies.

After understanding the existing situation and status on the new technology adoption and usage in the Oromia regional government bureaus through a suspicious study using questionnaire and interview, the proposed new technology adoption and usage strategy was developed. This

strategy combined a technology acceptance model and a technical new technology adoption strategy which is used to implement new technology without any resistance by participating all concerning body specially employee during adoption and usage stage in which the most job have been performed and all administrative and technical professionals were take part together.

These strategies are necessary for the adoption and usage of new technology within Oromia regional government bureaus. Based on questionnaires and interview results, the strategies are further classified into sub pillars and criteria. This strategy focuses on the initial adoption stage (new technology requirement analysis, Infrastructure availability, Bureaus or office readiness), implementation stage (New technology deployment and implementation) and post adoption stage (Upgrade /implemented new technology evaluation). It indicates that before adoption and usage of new technology or upgrading existing new technology it needs to think through the purpose or requirements of the new technology, identifying the availability of necessary infrastructure, bureaus readiness to accept or adoption to that new technology, decision to new technology deployment, implementation and Upgrade /implemented new technology evaluation.

Generally, to solve the problem of new technology adoption and usage the developed strategy has been approached after the result presentation and enhancement idea of the respondents. From the current result, new technology requirements analysis, Infrastructure availability, Bureaus or office readiness, new technology deployment and implementation, Upgrade /implemented new technology evaluation for adopting and using new technology successfully are the main input to solve the resistance of new technology adoption and usage in oromia regional government bureaus. The goal of this modified strategy is to implement new technology adoption and usage in Oromia regional government without any resistance from any parts of the regional bureaus.

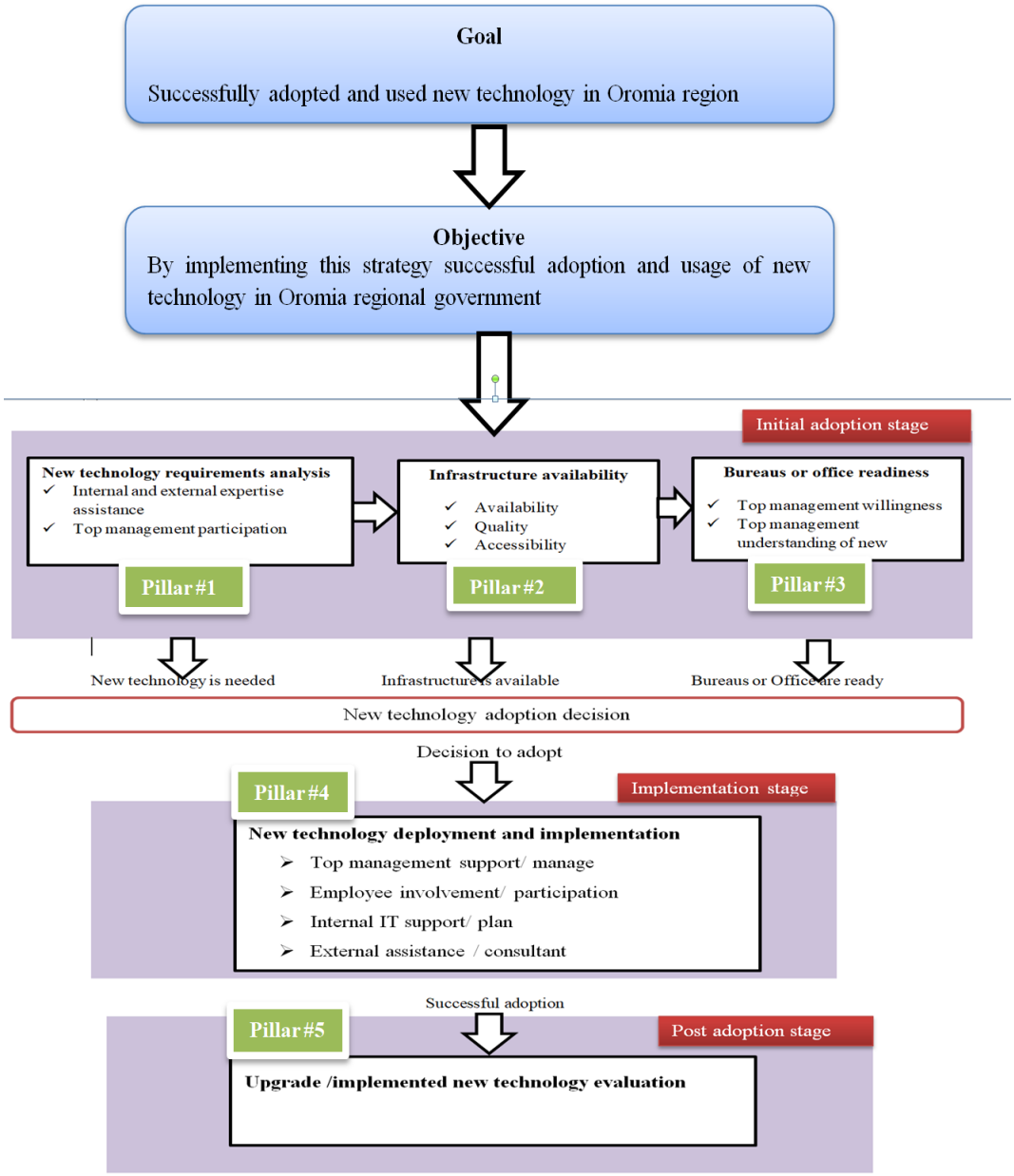


Figure4. 12 Developed new technology adoption and usage strategies (Morteza, 2012).

Strategic pillar #1 new technology requirements analysis

Before adopting and using new technology, requirement analysis is the key initial adoption stage, which is focused on the importance of new technology that will going to be adopted and used, its budget, stake holder that participated and strategic plan of the project. The process is performed by the combination of administrative and IT professionals either internal or external of the

organization. Administrative is required to provide commitment, budget and support to the new technology adoption and usage team. When administrative define and clearly supports new technology adoption and usage resources are more likely to be committed. Administrative also directly affects the successful adoption and usage of technological change by removing challenges during adoption and usage stage (David.W, 2017). Internal or external expertise's have the responsibility to consult, specify and give technical support through the adoption and usage process.

Strategic pillar #2 Infrastructure Availability

Identifying and specifying important infrastructure that is necessary to adopt and use new technology within the bureaus by its availability, quality and accessibility. It also includes the process of new configuration and upgrading currently existing infrastructure. The process is done by the combination of internal and external (consultants) professionals.

Strategic pillar #3 Bureaus or Office Readiness

The degree to which bureaus or offices has awareness, necessary resource, commitment and governance to adopt and use a new technology that would be adopted and used. Is the most significant organizational factor for adoption and usage of a new technology (Hameed M, 2012). Top management should have willingness to adopt and use the new technology, understand the flow and business process of the new technology, initiate and motivate employees to participate warmly during the process.

Strategic pillar #4 New Technology Development and Adoption and usage

It is the stage where the whole project process involved and it is the key stage of developing and, adoption and usage of the required new technology by all concerning body. All administrative were participated by supporting and managing the process. Coordinate the project process; provide the necessary budget, necessary infrastructure and human resource that run the process. Employees must be participating in this stage because they give idea or information about how that new technology is adopted and used during ongoing process. Input from employees during development is useful for new technology success. Internal expertise is participating by plan the

adoption and usage process and technical participation. There is also external expertise support technically in the form of consultancy.

Strategic pillar #5 Upgrade /Adopted and used new technology evaluation

The final stage is upgrade /adopted and used new technology evaluation which is collecting different feedback from end user and evaluating the new technology performance. If the performance of the new technology adopted and used is not satisfy the end user, new technology adopted and used also upgraded depending on end user feedback.

4.5. Discussions of the findings

4.5.1. Employee Related Challenges in Resisting New Technology Adoption and usage

This research is attempted to assess resistance to new technology adoption and usage in oromia regional government bureaus mainly focusing on four purposively selected bureaus (Oromia information communication and technology authority, Oromia revenue authority, Oromia health bureaus, and Oromia public service and human resource management) by questionnaire and interview as major research data collection tools. Firstly the respondents were asked information about the impact of the adoption and usage of new technology in to their bureaus on their job opportunity. The collected questionnaire response from the employee showed that, 170 (76%) of respondents reflected that adoption and usage of new technology to their bureaus have improve their job opportunity rather than eliminating and speedup their job or work. This shows that the concept of new technology adoption and usage into bureaus or office of every kind is clearly understandable to all employees even if there are many resisting factors that influence employees to resist new technology.

In the same way 40 (18%) respondents responded that, the adoption and usage of new technology to their bureaus or office eliminates their job opportunity. Obviously employee can fear the adoption and usage of new technology to their bureaus because of, if the activity they do completely replaced by technological means they were left their job and will become unemployed. In some cases there is a situation in which employees resist new technology for the fear of mistake that they make during their activity. Technology innovation has an important influence on employee's job performance where it helps to reduce human error, increase

productivity, and increase the speed of communication. Many organizations are facing difficulties in choosing suitable technology adoption strategies with the hope to improve efficiency and enhance employee performance to be competitive in the market (Shathees B, 2020).

To overcome this concept that is the reason of new technology adoption and usage resistance the bureaus have train employees about the purpose, concept and the way of adoption and usage of new technology in the daily activity of the employee. If new technology is adopted and used with suitable technology adoption strategies, rather than eliminating employee job opportunity it simplifies, speedup and perform many jobs in a short period of time with least human power with a high quality and quantity and improve employees performance.

Employee training or skill updating before adoption and usage new technology is required to make employees ready to welcome to the new technology and increase the probability of successful new technology adoption and usage. But clearly as we can see from the employee's questionnaire response it is nearly possible to say all respondents show their response the bureaus cannot train or prepare employee by their knowledge before adoption and usage new technology.

As we discussed under the result discussion employees were the main actor of every bureaus activity and work on that new technology. Adoption and usage new technologies without preparing human power or employee who accepts firstly that new technology by providing necessary training and skill gap updating is a fruitless work and the reason of failure. Then before adoption and usage every kinds of new technology the bureaus have prepare employees by training and skill update especially considering the technology that will going to be adopted and used with laboratory based practical session.

After necessary training and skill updating is to ward new technology is provided for employee, then in adoption and usage new technology the bureaus have involve or participate employees during new technology development and adoption and usage process. As discussed under employee questionnaire response 60% employee were responded that they were not participated during the process. As Kok et al., 2014 concluded simple question from an ordinary low level

worker could help management to anticipate problem and plan for the resolution. Employee participation reduces future new technology failure that rises from employee itself.

If employees were involved or participated during the process they cannot resist or ignore the new technology rather they accept and adopt quickly. Employee participation during the process makes them feel sense of responsibility, confidence and they considered as the increased quality, quantity and productivity is for them. Therefore involving or making employee participate during new technology adoption and usage process increase the whole performance of the bureaus and make employee feel sense of responsibility. So during new technology adoption and usage the bureaus or office should have involves or participate its employee for the whole above benefits.

In every new technology adoption and usage there should be a defined or clearly defined adoption and usage steps or procedure to keep the ongoing process on a track. New technology adoption and usage is a complex and bulky job that needs many participants and run through different stage that needs careful jobs. From the respondents response 183 (82%) of them responded that within their bureaus or office during new technology adoption and usage there is no adoption and usage procedure or steps to implement new technology that keep them on track or guided. As Kelly, 2019 suggested that Understanding what the adoption and usage process is going to look like is very important when deciding on a new technology solution.

Having an understanding of the issues within your organization, establishing your squad and getting early buy-in will allow you to have your new solution rolled-out as soon as possible to help combat operational inefficiencies. Getting trained on how to navigate this new technology will allow your organization to get the best return on its investment. And setting clear benchmarks will allow you to track your solution's success. Thus, a clear defined new technology adoption and usage steps or procedure increase the success probability of the adopted and used new technology.

Every organization implements new technology to increase the productivity of its service or output. Not only productivity of output also new technology adoption and usage can improve employee's job performance. As we see from employee's response 148 (66%) of them responded that new technology adoption and usage can improve their job or work performance. even there

were several resisting challenges against new technology adoption and usage employee were agree with idea of new technology can improve their performance. As Muhammad, 2014 concluded that technological advancement has significant impact on employee's performance; it means that as technology tend to be advanced, performance of employee enhanced.

4.5.2. Infrastructure factors in resisting new technology adoption and usage

As we have discussed separately under infrastructure challenges of new technology adoption and usage there are some points of those we focused on. Since all discussed issues concerning the bureaus new technology adoption and usage were interrelated with each other means availability, quality and accessibility of infrastructure, and then here discussed collectively. Depending on respondents response the availability of infrastructure of the bureaus or office is not satisfiable since out of all 168 (73%) respondent response shows that there a sufficiency or adequacy of infrastructures, which let them to access new technology. As we discussed under the questionnaire, without necessary infrastructure nothing to implement new technology, rather it is a valueless investment. In addition quality and accessibility is another considerable point when speaking about infrastructure. Even there is an infrastructure sufficiency, currently that configured were not in its standard or have no quality to access new technology. As shown from the respondents response against the quality of infrastructure 78% were not happy with the quality of bureaus infrastructure and also the accessibility is another problem of the bureaus as respondent reflect their response 67% of the agree with the lower quality of bureaus infrastructure. As concluded by Daniel F, 2017 High quality, availability and accessibility infrastructure provides direct positive impacts, including higher efficiency, increased safety, decreased environmental impact, and more effective delivery of public goods and services. In order to make infrastructure available, accessible and improved in quality the bureaus have important to improve the quality of infrastructure by doing annual infrastructure survey to identify outdated one and replace or make updating, increase in quantity by configuring new one and making the configured one available at every time and everywhere.

4.5.3. Administrative challenges in resisting new technology

Rather than anybody in every organization administrative is a responsible body of that organization and they were the figure of the organization. As we have seen in the results above

administrative is one of the bodies that considered as the resistant agent of new technology adoption and usage in oromia regional government bureaus. They consider as new technology put extra time, work and responsibility on them than normal condition of the bureaus. New technology save time, human power and simplify the way of management by appropriating communication channel, interrelation and support and follow up for administrative

They also fear of the additional costs as all of them response in questionnaire response they consider the adoption and usage of new technology can put huge or heavy cost on their bureaus than ever. As Granville A, 2021 suggested Technology may appear to be expensive at the adoption and usage stage, but may save money in the long-term, particularly where a low-cost technological solution can be found to replace a high-cost, low-tech application. Election management bodies (EMBs) need to weigh the costs and savings associated with introducing technology. These include the initial costs of purchasing hardware and software, the hiring of consultants to set up the new system and ongoing maintenance and management costs. From this we concluded that the initial cost that needs to implement new technology cannot exceed the outcome that obtains after new technology adoption and usage successfully. The cost that spent during new technology adoption and usage cannot considered as the extra cost of the bureaus rather the administrative should have understand the necessary cost that expended during new technology adoption and usage as a regular cost.

Additionally as the result of this study administrative cannot provide necessary training for employee and cannot let employee to participate or involve during new technology adoption and usage. Providing necessary training for employee during new technology adoption and usage is important for the successful of the new technology adopted and used.

Employee participation during new technology adoption and usage is very crucial to minimize employee resistance after adoption and usage. As Kok et al., 2014 concluded simple question from an ordinary low level worker could help management to anticipate problem and plan for the resolution. Employee participation reduces future new technology failure that rises from employee itself. If they were involved in adoption and usage process they were free from the fear of that new technology and they feel sense of confidence and responsibility to that new

technology and they provide necessary input for the project during adoption and usage that make them challenge after adopted and used.

4.6. General information of all the factors that considered as the resistance of new technology adoption and usage in this study.

Under this concept the general resistance ability or the majority of the three factors those considered as new technology adoption and usage resistance factor was compared and discussed depend on their average value of their response. According to their response the average value of employee challenge in resisting new technology adoption and usage was 73% and holds the first resisting factors or challenges from the three discussed resisting factors of this study. The second factors in new technology adoption and usage resistance is the bureaus infrastructure which holds 72.5% average of the all responses and finally administrative is the third and last factor in resisting new technology adoption and usage within the bureaus by 71.4% average value of its response. From the above point the researcher concluded that in new technology adoption and usage the first and most factors or challenges of resistance was employees rather than the rest, due to they were the body that perform or cover the bureaus of office large activity and human power. Additionally as discussed under the conceptual frame work of this study employees were the challenging factors that influenced by the other factors or by infrastructure and administrative, in that the factors of or influence of infrastructure and administrative were reflected through employee or enforce the employee to resist new technology adoption and usage. In a similar way overcoming or solving the factors of these two factors is solving or overcoming of the employee challenges in the other way. So the regional governments have to answer all the factors related to infrastructure and administrative then the employee challenge were solved in there.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.1. Conclusion

This study is aimed to find out the resistance to new technology adoption and usage in Oromia regional government bureaus. In oromia regional government bureaus successful adoption and usage of new technology is a challenging work that cannot be solved for a long time because of different factors and challenges. Among these challenges, as the results of this study shows employee resistance to new technology adoption and usage have the lion share. As discussed in the result discussion part employee resistance could be from different challenges. One and the most one is that employee's lack of training and skill gap updating before adopting and using new technology. Without employee awareness and skill about that new technology, new technology adoption and usage is impossible. The other one is the approach in which new technology have been adopted and used was not follow the scientific approach that guide and keep on track new technology adoption and usage. In adopting and using new technology there was no clearly defined steps and procedure to successfully to adopt and use that new technology. During new technology adoption and usage employee cannot take part or participated in the process rather the process can be done by group of management teams or experts. In a very few extent also there were employees fear of new technology adoption and usage because of considering successful new technology adoption and usage influence their job opportunity.

Next to employee challenges, the more and major factor that influences the adoption and usage of new technology within Oromia regional government is infrastructure. As the results of this study shows, the extent at which infrastructure quality, availability and accessible were not match with the new technology adopted and used. Also there was no annual survey of infrastructure to identify the functioning, malfunctioning, and the outdated one to replace or update to match with the new technology adopted and used. Currently configured infrastructure was not accessible at everywhere and every time.

At the finally there is also new technology adoption and usage challenges from the administrative of the Oromia regional government in one or more ways. Firstly since

administrative can run or manage the whole bureaus activity either internally or externally and become busy all the time, they consider new technology adoption and usage as extra time, work and responsibility than their normal working condition. The cost that expended for new technology adoption and usage also considered as heavy or extra cost of the bureaus. Finally they fear new technology adoption and usage with respect to their power or control.

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5.2. Recommendations

Depending on the findings of this research, the researcher recommend on the following outlined points below. In order to overcome the resistance to new technology adoption and usage within oromia regional government bureaus these points must be considered.

- ✓ Before adopting and using any kind of new technology the regional government must have infrastructure improvements either updating the currently configured one or re-configuring new infrastructure that match with the new technology that will going to be adopted and used by quality, quantity and accessibility.
- ✓ Improving employee's awareness, knowledge and skill against new technology by providing necessary training that completely matches with the new technology that will going to be adopted and used by real practical session rather than only class room theory and short time training.
- ✓ Making employee involvement or participation during new technology adoption and usage through initial adoption stage to final adoption stage as shown in proposed strategies.
- ✓ Preparing scientific approach to adopt and use new technology that follows all stages of adoption and usage procedure or steps.
- ✓ Making administrative aware of new technology adopted and used is their work, responsibility and would have included in their strategic plan.
- ✓ There should have strong interrelation or communication between administrative, employee and experts during new technology adoption and usage process rather than performing the job with few groups of management team and experts.
- ✓ Making awareness for all employees about new technology adoption and usage can improve the whole organization performance rather than considering as benefits of small groups or experts of the organization.

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Questionnaire for employees

Appendices

Appendix I: Employees' Questionnaire

Dear respondents,

Dear Sir/Madam,

In today's digital era, the adoption and use of new technology is an indispensable aid of doing many activities. A single government organization might be using hundreds of computers and mobile devices deployed at dozens of locations running numerous types of new technology to automate organizational operations and products. While adopting and using this new technology, in addition to their advantages, challenges are also common.

I am conducting a research on *"Resistance to new technology adoption and usage in Oromia regional government bureaus",* Therefore, I kindly request you to attempt all the questions listed in the questionnaire carefully, as this will help to complete the study successfully.

The information given will be confidential and will be used only for the purpose it has been collected for. There is no need to write your name. Your assistance will be highly appreciated.

Thank you!

Part I: Demographic details

Please Tick the circle which is appropriate with your possible answers

1- Gender: ○ Male ○ Female

2- Age:

○ Less than 25 years old

○ From 25 to less than 30 years old

○ From 30 to less than 35 years old

○ From 35 to less than 40 years old

○ Above 40 years old

3 - Education level:

○ High school certificate

○ Diploma

○ University degree

○ Higher degree (Master's/PhD)

5- Name of your organization or office:

○ Oromia Science Technology and Information Communication Authority

○ Oromia Revenue Bureaus

○ Oromia Health Bureaus

○ Oromia Public Service and Human Resource Management

4. Experience in this organization or office

- ○ < 2
- ○ 2 - 5
- ○ 5 – 10
- ○ > 10

Part I: Name of your bureaus or office:

- ○ Oromia Science Technology and Information Communication Authority
- ○ Oromia Revenue Bureaus
- ○ Oromia Health Bureaus
- ○ Oromia Public Service and Human Resource Management

Part II: A. Questionnaires For employees

1**.** How does new technology adoption and usage into your bureaus or office impact your job opportunity?

☐ Create opportunity ☐ Eliminate opportunity ☐ No impact

2. Does your bureau or office provide necessary training and skills up-to-date before the adopting and using of any new technology for you?

☐ Yes ☐ No

3. Can you communicated or participated in the processes with the concerning body, when new technology is adopted and used to your bureaus or office before adopting and using it?

☐ Yes ☐ No

4. Are there clearly defined adoption and usage steps or procedure for employees for the new technology adoption and usage process in your bureaus or office

☐ Yes ☐ No

5. Do you think that; if new technology is successfully adopted and used in to your bureaus or office, can it improve your job performance?

☐ Strongly agree ☐ Disagree

☐ Agree ☐ Neutral

B. Questionnaires For administrative

1. Can you imagine that the successful adoption and usage of new technology directly impact on your power or control?

☐ Strongly agree ☐ Agree

☐ Disagree ☐ Strongly disagree

2. Do you think that, the adoption and usage of new technology in to your bureaus or office put extra work, time and responsibility on you?

☐ Strongly agree ☐ Agree

☐ Disagree ☐ strongly disagree

3. Can the adoption and usage of new technology in to your bureaus or office put heavy amount of cost than ever to the bureaus or office?

☐ Yes

☐ No

4. Can your bureaus or office include schedule for learning or training for employees in annual plan to improve their skill gap and knowledge of new technology?

☐ Yes ☐ No

5. Can employee participation is necessary and important when new technology is adopted and used to your bureaus or office?

☐ Strongly agree ☐ Disagree

☐ Agree ☐ Neutral

C. Questionnaires about infrastructure

1. Is that enough resource or infrastructure are there in your bureaus or office to adopt and use new technology?

☐ Yes ☐ No

2. Can you think that the currently configured infrastructure is enough or appropriate if new technology is adopted and used to your bureaus or offices

☐ Strongly agree ☐ Disagree ☐ Neutral ☐ Agree

3. Can your bureaus or office annually make a survey of infrastructure to make new infrastructure configuration or update on the current one?

☐ Yes

☐ No

4. Is that the current infrastructure's quality is enough for the adoption and usage of new technology?

☐ Yes

☐ No

5. does the current infrastructure of your bureaus or office is available and accessible at every time?

☐ Yes ☐ No

Part III: Interview for administrative

1. Did your bureaus or office provide training to develop new technology related skills of the employee annually or quarterly?

2. Does employee have fully accessible infrastructure which helps them to access new technology?

3. Does this organization or office have internet access for all employees?

4. How many employees use computers with access to the internet and other peripherals for their daily job or activity?

5. When your bureaus or office adopt and use new technology, was there any resistance from the employees why?

6. Can the adoption and usage of new technology into your bureaus or office put influence on the government politics?

7. Can your bureaus or office let employee participated and communicated in the process during new technology usage and adoption?

Part III: Conceptual frame work user validation checklist

No	Check list	Strongly agree	Agree	Dis agree	Strongly disagree
1	Is this frame work is easy to understand?				
2	Does the frame work have contribution to understand new technology adoption and usage resistance?				
3	How is the relationship of the variable of this frame work is easy understandable?				
4	Either any complexity or difficulty in their hierarchy of variables				
5	Is the independent variable influence on one another is clear to understand				
6	Kindly recommend if any improvements on this frame work from your point of view				