



**ADDIS ABABA UNIVERSITY**  
**COLLEGE OF NATURAL AND COMPUTATIONAL SCIENCES**  
**SCHOOL OF INFORMATION SCIENCES**

**INFLUENCES OF TECHNOLOGICAL TRANSFORMATION AND  
ORGANIZATIONAL RESISTANCES TOWARDS TECHNOLOGICAL CHANGES ON  
ORGANIZATIONAL PERFORMANCES: THE CASE OF ADDIS ABABA CITY  
PUBLIC SERVICES AND PRIVATE SECTORS ORGANIZATIONS**

By

**SIMBO ARARSA KEBA**

MAY, 2018  
ADDIS ABABA, ETHIOPIA

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PRIVATE SECTORS ORGANIZATIONS

A Thesis Submitted to School of Graduate Studies of Addis Ababa University in  
Partial Fulfillment of the Requirements for the Degree of  
Master of Science in Information Science

By: **SIMBO ARARSA**

Advisor: Tibebe Basheh (PhD)

May, 2018

Addis Ababa, Ethiopia

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By: Simbo Ararsa

Name and signature of Members of the Examining Board

Tibebe Basheh (PhD)  
Advisor

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

Lemma Lessa (PhD)  
Examiner

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

Workshet Lameneu (PhD)  
Examiner

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date



## **Declaration**

This thesis has not previously been accepted for any degree and is not being concurrently submitted in candidature for any degree in any university.

I declare that the thesis is a result of my own investigation, except where otherwise stated. I have undertaken the study independently with the guidance and support of my research advisor. Other sources are acknowledged by citations giving explicit references. A list of references is appended.

Signature: \_\_\_\_\_

Simbo Ararsa

This thesis has been submitted for examination with my approval as university advisor.

Advisor's Signature: \_\_\_\_\_  
Tibebe Basheh (PhD)



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## Abstract

*Globalization, restructuring 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 of technology. Technology transformations or changes have an important influence on organizational performance. Technological advances are always candidates for risk due to the concern with new information, which require a new way of working and thinking. So it could alter the proper role of the human involvement in the organizational productive and results a high degree of resistance associated with technology evolution. There is a close relationship between technology advancement, human resource management and organizational performance. Change in technology has been identified to have effects on employees work performance and attitude. Thus, the main objective of this study was to identify the Influences of technological transformation and organizational resistance to technology transformation on organizational performance in selected public services and private sectors in Addis Ababa city. Cross sectional Survey method, questionnaires and semi structured interviews were used to conduct the study. Simple random and strata sampling methods were used and sampling methods. Survey responses were measured using a five point Likers scale. Descriptive statistics and ANOVA were carried out for analyzing the collected data. The finding of the study indicates that technological transformation and resistances of organization towards technology are a major factor for organizational performances. The influences of combined two independent variables: technological transformation and organizational resistance towards technological changes are more than influences of independent variables separately. So, organization should have to works on mitigating resistance towards technology by: training employees and creating awareness about newly coming technology, planning properly about adoption of new technology.*

**Keywords: Technological transformation, Employee Resistance, Organizational performance, Resistance to Technological transformation,**

## Abbreviations and acronyms

AB	Awash Bank
AIC	Awash Insurance Company
BLH	Black Lion Hospital
EAL	Ethiopian AirLines
ETC	Ethio TeleCom
IP	Internet Protocol
IT	Information Technology
NW	Networking
RVU	Rift Valley University

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# Chapter One

## 1.0 Introduction

### 1.1 Background

One of the major changes that took place in organizations is transformation of technology. Technology innovation or change has an important influence on organizational performance and employees. There is a close relationship between technology transformation, human resource management and organizational performance. Change in technology has been identified to have both positive and negative impacts on employees work performance and attitude. Technological innovation continues to impact on the public sector workplace as much as it does in the private sector. A new imperative to address the unique needs and aspirations of the individual is gradually gaining recognition in workplaces of all kinds. These workforce trends are even now presenting the public sector with a broad range of significant employment challenges which will increase with time. In the face of remarkable changes, the public sector must find new ways of managing its workforce to enhance skills, capabilities, productivity and high performance (- Ameri, 2013).

As technological transformations or changes are needed in both public and private sector, there is a challenge following the introduced transformed technology. Once in Jimma University there was research method seminar for all MSc students, PhD students and some staffs. At the end of the seminar the trainer created sets of groups and we were discussed on the issues of technological transformation in institutions. But, we were not finalized the discussion because many issues were raised. Finally, were agreed on, as far as technological transformation needed in institutions it is difficult to work with acceptances and willing of the user or employees. According to (Gonçalvesb, 2012)Employees resistance to technological change: complacency, fear of the new, fear of the unknown, fear of losing power, ignorance of the contents of the advantages and / or disadvantages of the changes that arise and ignorance about changes that occur in internal and external environment.

ETC (Ethio telecom) organization is a public organization that services public, it is one of the big-five (5) group of state owned corporations in Ethiopia, among Ethiopian airlines, commercial bank of Ethiopia, Ethio Insurance and Ethiopian shipping lines (Kebede, 2014). This large organization sector are the one of public service sector that focuses on newly coming technology and advanced one for better service delivery and for surviving competitiveness with others sector.

Ethiopian Airlines (EAL), is country owned government, founded on 21 December 1945 and commenced operations on 8 April 1946, and expanding to international flights in 1951. The company became a shared company in 1965 and changed its name from Ethiopian Air Lines to Ethiopian Airlines ([www.ethiopianairlines.com](http://www.ethiopianairlines.com)). As it is international airlines it always searches for newly coming technology for security issues, for good services delivery and etc.

Black lion hospital (Tikur Anbessa Hospital in Amharic) is the largest general public hospital and one of only two University hospitals in Ethiopia. The faculty is the oldest and the largest among the health training institutions in the country. The hospital provides the tertiary level referral treatments and is open 24 hours for emergency services (<https://www.ethiovisit.com/directory/black-lion-hospital/1263/>). This hospital has had many medical instruments and new generation technology in their laboratory and as it is health training Centre it forecast for transformed technology for creating better health care environment.

AB (Awash bank) was established by 486 founding shareholders on November 10, 1994 with a paid up capital of 24.2 million. It was the first private commercial bank in Ethiopia. Their mission is to provide innovative, competitive and diversified banking services accessible to the society with quality and committed staff in a profitable and socially responsible manner. Their core values where accessibility, wisdom, accountability, socially responsible and honesty. Their services are special deposit, account, digital channels, foreign currency account, interest free banking, money transfer, credit services, and international bank services. As it uses digital channels this private company adopted and uses advanced technology for more productivity and to survive competitive environments ([www.awashbank.com](http://www.awashbank.com)).

AIC (Awash Insurance Company) is one of the first little pioneer private insurance companies in Ethiopia launched following the liberalization of the financial sector in 1994. AIC is progressing

in renewing its commitment to excellence. They always work for the maximum satisfaction of the customers who rely on us and who have put confidence in our company. Their mission is to provide diversified general and long term insurances services to its esteemed customers with great excellences, profitably and ethically through the application of state of the art technology. To accomplish their mission and vision they look for transformed technology, that they implement new system for their company. As their main target is creating flexible and ease environment for employees and users for more productivity and efficiency in their company they always searching for advanced technology to be competitive and to survive the environments ([www.awashinsurancecompany.com](http://www.awashinsurancecompany.com)).

RVU (Rift Valley University), it is a largest and known private University in Ethiopia, at this time it has more than 30 branches in the country, and has many students in its branches. This private University focuses on creating and developing matured and professional students, as it focuses on technology professional it focuses on adopting and implementing new transformed technology to achieve their goals and missions.

Change has become common and pervasive in most organizations but is often resisted by employees resulting in conflicts and reduced organizational performance. "Any management's ability to achieve maximum benefits from change depends in part on how effectively they create and maintain a climate that minimizes resistant behavior, encourages acceptance and support". New technologies/systems grow out of old technologies/systems through a process of transformation. Innovations are new combinations of old things, through what Usher 1929 call "a process of cumulative synthesis". So change came from existing things for better uses and advantages as needs are unlimited to specific level of satisfaction, human beings seen for new things in nature. This means according to Usher transformation of technologies comes from advancing existing technologies (-Ameri, 2013).

Information Technology (IT) as part of technologies, it is one of the contemporary factor affecting different areas of business organizations towards their competitiveness. The barriers to adopt the IT were inadequate IT strategy, lack of government incentive, lack of perceived economic or other benefits to the unit, unwillingness of personnel to use IT, lack of localization, lack of training and consulting, new versions of existing software introduced too often (support

fee) and expensive hardware/software, which creates inconsistent ICT adoption in strategic business units (G/Yohannes, 2016). Information Technology (IT) is one of the contemporary factor affecting different areas of business organizations by: Enabling real-time communication for purchase and supply, Capturing Customers' needs trend, changing way of production and innovation, Enhancing customer service, selling and distribution channel, Increasing management flexibility and integration, Redefining organizational boundaries between customers, supplier and Employee (White and Bruton, 2009).

Generally, technological transformation is main current issues that many public and private organizations confused with it. It impacts the way of their business and service delivery at the same time and also an expensive one to adopt and work with it. And resistance towards the transformations occurs in organization also affect the progress of the works and degree of competitiveness of organizations. Technological transformations and resistances towards technology change hinder organizational growth and work performance. Mainly the study focus on identifying influences of both technological transformation and organizations resistance to technology on performance of selected public services and privet sectors organizations in Addis Ababa city.

## **1.2 Statement of the problem**

Nowadays, new generation technologies are there in organizations for increasing transparency and trust, effectiveness and efficiency, engaging citizens in governmental processes, developing new metrics for success etc.... The link between technology and organization was first illustrated by Joan Woodward in mid 1960s, it focused on production technology. She was the first to view the organizational structure from a technological point of view. There are organizational and technological factors that limit the adoption and use of technologies. And also organizations employees are resisting the technological change or not willing with newly coming technology. Technological advances are always candidates for risk due to need of new information, way of working. So it could alter the proper role of employees in the organizational work environment. This lead to a high degree of resistance of employees associated with the evolution of transformed technology (SHOEB, 2014).

Technology advancement can also influence the nature and culture of an organization. Changes have the possibility of influencing an employee's job responsibilities, which can create feelings of uncertainty. Resistance can also come in the form of attachment to old processes and legacy tools that employees are comfortable with. New technology may slow down production until employees become accustomed to using it. When an employee becomes comfortable with the new tool and establishes a routine in using it, efficiency should increase. In the beginning of the implementation, communication with staff about the new system was minimal. The communication that was done was informing employees and managers a new system would be used to acquire certain data from the casino systems, but specifics on the operating or training on the new technology were not shared. Some aspects of the nature of the changes were coming were very clear when the communication was provided. Information such as why it is important to make the change and the effect on employees professionally was not discussed. Open communication within the lower level employees and management did not exist. Adoption of a new tool introduced multiple challenges with managing the employees' acceptance and trust of the new technology into their daily work. Management had to determine the best way to integrate this new technology into the daily routine of staff (D'Agostino, 2015).

Other author comes up with; resistance to change among people and corporations drastically reduces the success of any venture. The author concluded that the problem of resistance to change is quite common, but it is a problem with high complexity and difficult to treat. It involves human behavior. Human reactions as resistance require individual consideration. It is very difficult to use techniques or tools to avoiding it. As noted by Rehman, "some processes such as transparency and agreement with employees about coming changes treat resistances of employees. This combination of actions can help to improve the process of change, preparation for creating the ideal environment to reduce the resistance." Investigating open and maintained clear channels of communication with employees, so that they understand what is coming and what it means to them (Rehman, 2008).

However, creating open and clear communication channels between employees and top managers are not the final solution to minimize resistances towards change. This means, not only others employee; managers and change leaders are also resisting the change. So, this study will

be including managers, change leaders and employees. The reason to undertake this study is; nowadays technological innovations and transformation are noticed daily, this change or advancement has made challenges in organizations and resistance to technological changes occurred in organizations. This resistance hinders works performance in organizations. So the main aim of this study is to identify the influences of technological transformation and organizations resistance to technology on performance of selected public service and private sectors organizations in Addis Ababa city.

### **1.3 Research questions**

1. What are the positive and negative influences of technological transformation on organizations performance and for individual employees?
2. How does employee's resistance towards technologies change affecting organizational performances?
3. What is employees' perception toward technology transformation for individual and organizations performance?
4. What are the main causes for resistance to technological transformation by the employees in different public service and private sectors organizations?

### **1.4 Objectives**

#### **1.4.1 General objective**

The general objective of the study is to identify the Influences of technological transformation and organizational resistance to technology transformation on organizational performance in selected public services and private sectors organizations in Addis Ababa city.

#### **1.4.2 Specific objectives**

- To identify the influences of technological transformations on organizations performances and individual employees
- To identify influences of employees resistance toward technological transformation on organizations performances.

- To identify the perceptions of employees toward technology transformation on individual and organization performances
- To identify the main causes for employees resistances

## **1.5 Scope of the study**

The study was delimited to identifying influences of technological transformations and organizational resistance to technology transformations on organizational performances in selected public service sectors in Addis Ababa city. Cross sectional survey method and simple and strata sampling methods was used for conducting this study. The selected six (6) organizations are target organizations of the study. And it was done in ten months' time (August-June).

## **1.6 Significance of the study**

Newly coming technologies are needed in organizations to be competitive, succeed, and also for creating better work environment. The findings of the research help organizations to figure out the gaps in the technological transformation and its acceptance in organizations. And helps to identify precisely where improvements can be made and what needs to be done to avoid or minimize employees' resistance towards technological transformation. The finding also can serve as a benchmark to identify influences of technological transformations and resistance towards technology change in public service sectors and other organizations. The selected public service sectors can also use the findings as an input to their schedule of introducing technological changes and apply the recommendation to minimize the resistance of employees toward the change. Moreover, the findings add value to the existing body of knowledge on influences of technological transformation and organizations resistance to technological changes on organizations performances, i.e., it can be used as an input for further research on impact of technological transformation and resistances toward the technology on performance of organizations in different sectors.

## **1.7 Organizations of the study**

This study is organized into five chapters. The first chapter discusses about the background of the study, statement of the problem, objectives of the study, scope of the study, significances of the study and organization of the study. The second chapter discusses review of related literatures to Influences of technological transformation and organizational resistances toward it on organizational performance and discuss related works in that area. The third chapter discusses the methodologies, population of the study, sampling techniques and methods, procedures followed for the data collection, analysis and interpretations, and reliability and validity test. The fourth chapter presents the analyzed data, findings and discussion of the results. The fifth chapter brings to an end of this research with conclusion and recommendations. Lastly references and appendixes are there.

## Chapter Two

### 2.0 Literature Reviews and Related Works

#### 2.1 literature reviews

##### 2.1.1 Technological transformation and its impacts

According to New systems grow out of old systems through a process of transformation; historians of technology have known it all along; Schumpeter, (1939), Who reminds us that innovations are new combinations of old things, through what Usher \_1929, Calls ‘a process of cumulative syntheses? There are two processes of co-evolution: the coevolution of different technologies, what we call ‘technological co-evolution’, and the co-evolution of technologies and society. Technological co-evolution occurs when the development of one set of devices is intimately linked to the development of other devices within a macro-system in which each set of devices exert powerful mutual selection pressures on the other. In sociotechnical co-evolution the development and use of technology proceeds in tandem \_but not necessary in harmony with social, economic and institutional change. Gradually a new regime emerged with its own distinctive knowledge base, technologies, practices, applications, and constituency of suppliers, users and other actors and the developers and users developed a better understanding of the technology and the way it might be used for specific purposes;

Business center wants its workforce to perform smarter, faster and more productively. Achieving that goal requires innovative solutions to make it easier for your employees to collaborate, communicate and exchange data without restrictions. Digital technology improves how organizations engage with consumers, enhances customer experience and helps to stay comparatives in the markets.

Technological innovation provides the life-blood of economic activities. Technological innovation is a tool for economic growth and the application of those inventions to meet emerging business opportunities, and to meet social needs, and environmental challenges (Charles, 2014). According to (Mark, 1987), introduction of new technology has become vital in all sectors so as to reduce cost and compete with the national and internal markets.

According to (Peters T. a., 2004), adopting new technologies with new strategies and approaches enable a business to produce effective outcomes. The outcomes of businesses depend much on the rate of implemented technology change; this rate of change can have differing impacts on the organization in terms of production and performance.

According to (Yuan Li, 2005), 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. It is said that technology change can improve a firm's competitive advantage and increases the overall performance of organizations.

#### **2.1.1.2 Driver for technological transformation**

When the company introduces new technology and this new change is viewed as a positive one by the employees it enhances the overall development of the company. Once employees understand more about change and its potential impact this brings success to the organization. Most resistance will occur when change is seen as negative as many employees think that change increases work pressure by adding unwanted work, responsibility and accountability (Chapman, 2002). Furthermore, (Chapman, 2002) stated that most employees oppose new technologies because they feel that change will not solve all the problems in one particular period of time.

According to (Gray, 2006), there are many factors which drive technological changes and these come from different factors which mostly include corporate evolution, globalization, privatization and technological developments. In his study he suggested that there is a need for change management when implementing new technological solutions and that management should discuss with the employees the issues encountered during this type of change.

- **Corporate Evolution:** (Smith, 2001), in his study, discussed the influence of corporate change on employee resistance to change. He stated that the most important and common feedback from employees concerning the process of implementation of a new corporate culture is a sense of a development imposed on them without thinking about the impact of this change on the particular work environment. (Smith, 2001) also stated that the end result of such an environment may mean that the organization receives compliance from the employees to whatever they have instigated but not their full commitment.

- **Globalization:** In nowadays business world, companies need to undergo change constantly if they want to remain competitive. One factor which rapidly affects emerging technology is globalization which forces organizations to respond quickly in order to withstand and survive in the market ( (Peters T. a., 2004).
- **Technological Development:** Nowadays technology is changing fast and it is very difficult to keep track and to stay constantly aware of new technological developments. Technology changes continuously and all the time there will be continuous improvements in the abilities of companies to do things faster, better and cheaper (Chapman, 2002). It is a must for companies to adopt and implement technological developments in this competitive world (Chapman, 2002). According to Beer and Nohria (2000), change is happening faster than most of employees care to think about change or its importance. Most of the employees do not want change as they assume the premise that change will always have a negative impact. The main reasons for this resistance to change are fear of failure, fear of being made redundant and fear about an uncertain future (Beer and Nohria, 2000).
- **Privatization:** In terms of organizations, employees tend to resist change due to privatization and this can be a dominant factor which affects employee resistance. According to Buchanan and Huczynski (2004), one of most powerful forces driving change in the roles and relationships in a structured organization is privatization.

According to Honey (1988), other factors for technological changes or transformations are: Desire to be more efficient by passing responsibility down the hierarchy, need to increase customer satisfaction, need to utilize current production practices and desire to be more flexible and adaptive.

### **2.1.2 Resistance to technology changes in organizations**

Resistance is any conduct that strives to maintain the status quo in the face of pressure to change. It is perceived by many as a responsive behavior which is intended to ‘protect an individual from the effects of real or imagined change’ that it is the ‘active or passive opposition to change and the management of change’. The concept of resistance amongst the workforce is often considered as a directly opposing force to successful change and that ‘change can only occur if the force promoting change exceeds the resisting forces’ (Sherman, 2007). Resistance itself can

be conceptualized in three forms; as a cognitive state, as an emotional state, and as a behavior. There exist two categories of resistance: passive and active. Passive resisters only ‘perceive the negative in change and express discontent through complaints, moans and grumbles’, however they are followers in the resistance effort and will replicate what the majority of people do (James Bruce, 2015).

Overcoming resistance” has not provided many truly effective solutions to employee resistance. Is this because people inherently resist change, and no matter what you do, that resistance will exist? Or is it because change management approaches have not yet evolved to provide solutions to the real causes of the problem? From their perspective, the bottom line about resistance is straightforward: Resistance is always present in complex change efforts, Resistance is a good and natural response, not a bad thing, working with resistance competently will always lead to increased results, You should never try to “overcome” resistance; instead, you should learn to nurture it, use it, and benefit from. A comprehensive approach to change is made up of three critical areas:

- Content (what is changing, i.e., structure, systems, technology)
- Process (how the change will be planned, designed, and implemented)
- People (those impacted by or participating in the change)

Employee resistance can be caused by any of these three areas, either from negative reactions to the changes, how the change is being handled (process), or from people's natural reaction to change. Which of these areas is causing the resistance is very important, because how you might resolve the resistance will depend on what is triggering it. Employees resist change when they perceive the direction of the change is wrong. In this type of resistance, they don't accept the change because they feel it is bad either for them personally or for the business (Bao, 2009).

Resistance occurs in ALL employees, from the CEO to the line worker. In fact, the initial stages of transformation efforts often include weeks or months of meetings where senior executives work through their own resistance. These meetings are often heated discussions about what needs to change in the organization, why it needs to change, and how it will change. These debates often include significant political posturing as executives try to maximize their own organization's individual gain from the change. Once all this gets resolved, senior management announces the change effort to the organization, as if they have always been aligned ([www.changeleadersnetwork.com/blog](http://www.changeleadersnetwork.com/blog)).

As cited by Ameri, (2014), the opinion that adopting new technology is a challenging task for organizations as it alters job design and the role and responsibilities of employees and can lead to negative consequences for employees.

### **2.1.2.1 Factors for resistances**

According to Wargin and Dobiye (2001), there are three reasons why people resist change with respect to technological transformation. Firstly, people resist change because they do not have the required skills to use, or gain the benefits from, the new technology. Secondly, traditional companies and industries' employees do not understand the application of new technology and how such business is undertaken, processed and executed. And, finally, new technology changes organizational structure as top and middle level management inclined to redefine business models.

### **2.1.2.2 Types of Resistance to Change**

“Active” resistance, “passive” resistance and “aggressive” resistance are the different ways through which resistance to change is exhibited (Goldberg et al., 1999). There are three levels of resistance to change. These types can be broken down into three groups: organization-level resistance, group-level resistance and individual-level resistance. Understanding these different types of resistance can help in understanding the ways to reduce resistance and to encourage compliance with change.

- ✓ Organizational Level resistance – This includes resistance to change due to organizational culture, power and conflict, structure and differences in functional orientations.
- ✓ Group Level resistance - This includes resistance to change due to group thinking, group cohesiveness, escalation of commitment and also group norms (Mike .S, 2006)
- ✓ Individual Level resistance (Goldberg et al., 1999) - This includes resistance to change due to selective perception and retention, uncertainty and insecurity and employee habits.

Employees resist change due to their low tolerance levels whereby they are not able to develop the new skills and new behavior that are required for the new circumstances resulting from the introduced change (Mike .S, 2006). This resistance also arises because of employees' fear of learning new skills and fear or inability to adapt. Resistance is said to depend on the treatment

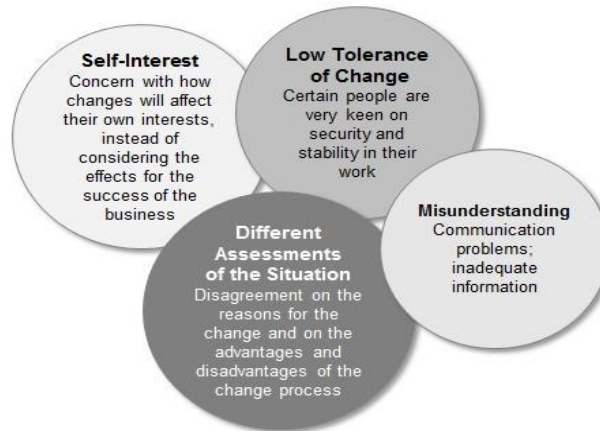
that employees receive during the change process and on the relationship between employees and the organization. Sometimes change may include psychological dynamics known as “competing commitment” where change is not challenged but is resisted or not implemented due to certain issues which the employees face (Kegan, 2001).

Resistance to change in organizations can be seen at four different levels which are human resources, technological resources, functional capabilities and organizational capabilities. At the functional level, the changes to resistance can be seen in a sub department’s orientation. At the human resources’ level an employee’s insecurity, perception and uncertainty can be observed, and at the organizational capabilities’ level it is the restructuring, reengineering, downsizing and revolutionary changes that can be observed. Finally, when looking at technological resistance to change, it is the changes in technology and the perceptions of managers and employees with regard to all types of change as well as that play a significant role (Pham, 2011).

#### **2.1.2.3 Reason for resistances**

The primary source of resistance at the formulation stage explains that change starts with the perceptions of its need and the major initial barrier to change would be wrong perceptions. This includes:

- Inability of the organization to look into the future with clarity.
- Inability to accept any information that is not desired.
- Tendency of the people to go on with their present thoughts even though the situation has changed.
- Implicit assumptions, communication barriers.
- Organizational silence when the flow of information is limited to individuals. In other words, it can be said that decisions are taken without taking all the necessary information into consideration.



Sources: (-Ameri, 2013).

According to Rick (2011), there are many reasons why people resist change; it may be the purpose of the change is made not clear, in the sense of employees' understanding about change and not being involved in change process. When there is an appeal for change based on personal reasons, where the employees' habitual patterns are ignored and in cases where there are no organizational change processes like technology development, changing policies and, change management. When there is poor communication about change, the reason for resistance may be the fear of failure or high pressure from the market, competitors or any other external factors. When there is less recognition received in spite of hard work, less satisfaction is manifested by employees. Apart from all these reasons, resistance is common from the employees' point of view which may be because of a lack of knowledge, skills and competence. Thus it has been identified that employees generally resist change but the reasons for this could be many. Identifying individual reasons is difficult but identifying reasons in general can be easier. As discussed above, there are many reasons but the reasons, based on group and individual perceptions, need to be identified and addressed before implementing change.

#### **2.1.2.4 Influences of resistances on organizational performances**

There is a strong positive relationship between HRD practices and employee performance (Yuan, Yongbin and Liu, 2005). New HRM practices such as appraisals; motivation, proper training, mentoring and guidance can help organizations and employees to improve performance (Honey,

1988). In addition, conducting regular training programs has been shown to have a positive impact on employee job performance.

### 2.1.2.3 Strategy for mitigating resistances

According to Metha, (2006), the opinion that technological change can also lead to changes in job satisfaction, stress, working conditions, productivity and operational efficiency. However, these fears can be mitigated by public sector management by imparting training to their employees in different phases and at different levels.

As a further point, according to Krantz (1999), resistance to change weakens the base upon which the employer and employee relationship (called a personal compact) is built. All the formal compacts that are defined by the company such as job description, employment contracts and performance agreements which are very important for organizational tasks and performance requirements are lessened in value if the employer/employee relationship is weakened. Feelings such as trust and dependence between employer and employee, which is the foundation of an employee's personal commitment to individual and company objectives, can distract from the organizational structure.

Employees can have negative perceptions about the culture of an organization and this will show as a negative impact on the success of the organization. Thus, it is important to acknowledge and fully understand the nature of resistance. Once it is identified there are several strategies that can be used to overcome resistance to change within organizations (Eisenhardt, 2000).

- ❖ **Motivation:** According Yusoff, Kian and Idris (2013), the view that motivation includes increasing employee performance through assistance, guidance, discussions with employees as this helps in improving employee performance. So it is the responsibility of managers of organizations to keep their employees motivated.
- ❖ **Training:** According to Butterfield (2010), at work change is constant and, accordingly, employees need to change themselves within the working environment. One strategy which can overcome resistance to change is training and development. New technology and new procedures should be learned in order to improve productivity and quality in the workplace. It is essential for managers to implement “innovative” training sessions so that they can build a strong environment in the organization. These training sessions will

provide a kind of motivation for their employees to improve their performance and achieve the organizational goals effectively.

- ❖ **Communication:** According to Rick and Jeanenne (2011), one of the important strategies in overcome resistance to change is communication, because communication is the key that is available to anyone in order to clear their negative impressions about change. Resistance occurs when there is a lack of communication between management and employees because employees feel that they are not involved in the process and have not received any communication about anything in the change process.

### 2.1.3 Perceptions of employees toward technology changes

Organizational resistance to technological innovations, which are defined as new knowledge or know-how employed to develop or manufacture a product/ service. The scope of this definition covers both product technology, such as modular telecommunication systems, and process technology, such as the just-in-time (JIT) manufacturing process. Organizational resistance to technological innovations is defined as “organizational behavior that serves to prevent a firm from purchasing a performance-enhancing technological innovation and to maintain the status quo”. Notably, not every technological innovation is able to improve the performance of industrial customers or better satisfy their needs than existing technologies (Imran, 2014).

Employees usually resist the process of change when they: don't feel included in it or don't have their needs or interests represented, don't feel informed or adequately communicated to about it, perceive the decision-making process driving it as unfair, feel overwhelmed by the number of change activities taking up time and resources necessary to do their “real” work or Feel they can't succeed in it because of inadequate expertise or training (-Ameri, 2013).

### 2.1.4 Organizational performance

Performance according to many researchers it is dependent variable in organization. A change in technology has a significant effect on performance and that change in customer taste has a significant effect on customer's support. A change in management via leadership has a significant effect on employee's performance. Technological changes and resistance to technology are a direct effect on organizational performances, that performance is depend on technology in organizations and acceptances of technology (Thomas, 2014).

#### 2.1.4.1 Indicators of performances in organizations

The dependent variable organizational performance which has the measuring tools: Staff quality, Product quality, Level of sales and revenue, financial strength, Employee productivity, Public image and Good will (Charles, 2014).

According to Parmentor (2010), so as to make a change process a successful strategy it is vital for organizations to develop and utilize KPI's (Key performance Indicators) at workplace. Job performance indicators are useful tools to measure organizational and employee effectiveness. In order to achieve organizational objectives an organization has to develop KPI's which are essential to clearly identify the organization's values and its philosophy and also to clearly identify the client's needs and especially in relation to their needs. As organizational performance is dependent variable in the organizations there are indicators of performances or measurement of performances. As states in many studies, there are many and different factors are raised.

- **Control over works:** According to Mathieu and Zajac (2000), control over the work environment is done internally or externally. The internal foci of control are the indicators of long term career success, such as promotion, training and development of reward systems etc. which helps an organization in providing quality of service and brings success by achieving its goals quickly. External job control indicators include creating job opportunities which will help an organization's employees and individuals in avoiding stress. It is necessary for the government and organizations to provide employment opportunities for individuals as this brings overall development for the organization as well as for the nation.
- **Accomplish the task quickly:** It is important that the employee of an organization can accomplish the given target quickly. It enhances the overall performance of the company. According to Dean and Linda (2010), for an employee to accomplish a given task on time, he/she should have control over his/her emotional intelligence. To make employees complete the given task on time management has to take care of certain things like motivation, training and career development aspects.
- **Improving the quality of work:** According to Ali and Davies (2003), Organizations, in order to improve the quality of work, are applying different strategies such as

encouraging promotions, recognizing the good work undertaken by employees, reward systems, introducing incentives, etc. Management and staff who wish to use the performance indicators wisely need to be firmly committed to the provision and development of quality services and see the mistakes made (including poor performance) as an opportunity for improving the quality of work rather than instigate punishment; this brings positive changes in the perception of employees towards organizational development.

- **Eliminating errors:** According to per Whitener (2001), many companies bring in changes in their entire management system just to see improvement in the job performance of the employees. This includes technological changes, HR changes and environmental changes. In order to bring in technological changes organizations have to put effort into training their employees which, brings development in the job performance of an employee. HR changes include changes in the performance appraisal system which can be of benefit to both to the employee as well as the organization. It helps the organization to direct the employee towards organizational goals by letting employees know what is expected from them. And companies have to improve the performance of jobs by reducing wastage, whereas trading and other service organizations focus on eliminating errors by providing quality services to its customers ensuring an improvement in the performance of the employee as well as the organization. Poor quality workplaces and emotional stress, factors such as environmental disturbances in the company and in the employees' surroundings can bring a decrease in employee concentration on the assigned tasks. Hence, all these factors need to be taken into consideration in trying to produce effective performance without any errors.

## 2.2 Related works

As this study focus on two variables there is no direct similar works with the impacts of technological transformation and resistances to technological changes on organizational performances, but there are some works that concern about impacts of technological transformation on organizational performances, impact of resistance to technological changes on organizational performances in public sector organizations.

According to (Charles, 2014), thesis study investigated the impact of technological innovation on organizational performance. The objectives of the study were to determine relationship between strategic planning and marketing planning capabilities on organizational performance in the manufacturing industry. The study employed survey research method. Primary data was used with questionnaire as research instrument. The subjects were 137 sample sizes of employees of Nestle Foods Nigeria Plc. Stratified sampling techniques was used the study as the population of the study is in different level of position in organizations. There were four hypotheses formulated for the study, which was tested using correlation, regression analysis, Pearson's Correlation and Analysis of Variance (ANOVA), with the aid of Statistical Package for Social Sciences (SPSS). The findings from the study revealed that strategic planning and marketing capability independently and jointly influence organizational performance. Also, there is positive interaction between performance variables (i.e. resources availability, staff quality, productivity, sales revenue, financial strength, public image and good will). Based on the finding, it was recommended that there is the need for organizations to be innovative technologically to be competitive in the market. And companies should train their employee for better efficiency and effectiveness.

However, her study was focus only on impacts of technological innovation on organizational performance in manufacturing industry, and as objectives she was focused on the relationships between two variables: strategic planning and marketing planning. So, that the study was not reaches all gaps in the study areas, since the transformation in organization can also impact the life of the organization and its employees. So, this study combines the impact of technological transformation and resistance to technological changes on organizational performances.

According to (-Ameri, 2013), study was emphases on assessing resistance to technological change for improved job performance in public sectors, Survey method and semi structured interviews were conducted with HR managers in three UAE public sector companies. Survey responses were measured using a five point Likert scale. The objectives of this study were to identify the factors, which call for technological change that lead to technological resistance, improvement in job performance, develop a framework for assessing employee resistance to technological change and identify opportunities for improvement, further validate framework using case studies in the UAE. Change in technology has been identified to have both positive

and negative effects on employees and organizational work performance and attitude. The study was aimed at developing a framework to identify the factors that may point to employees' resistance to technological change within UAE public companies and to use the framework to identify opportunities for improvement in job performance. However, this study was only focused on the resistance towards technological changes and its impact on work performances in organizations, though the current study focuses on identifying the impacts of technological transformation and organizational resistances to technological change on organizational performances in public services.

According to (Hugh Cronin, 2014) study on Examining the Relationship between Employee Resistance to Changes in Job Conditions and Wider Organizational Change, used survey method for conducting the study and questionnaires' was used as data collection instruments. Their objectives were to identify the factors that influence workforce resistance and the subsequent impact of such resistance on various forms of organizational change, they reduced their linked employer-employee data to the level of the firm by retaining one observation per organization. Last what was their target was to examine the determinants of organizational change and employee resistance to change and, specifically, to examine the influence of employee inflexibility on the implementation of firm-level policies aimed at increasing competitiveness and workforce flexibility. It was done on public service like hospital, however they were only focused on resistances to organizational changes in case of employee and employment determinant.

## Chapter Three

### 3.0 Methodology

#### 3.1 Introduction

This chapter covered the research method, research design, the target population and sampling method, method of data collection, development and validation of the research instrument, and method and tools of data analysis.

According to (Hevner et al.2004) Information System (IS) research involves two distinct and complementary paradigms, namely behavioral science and design science research. Behavioral science seeks to develop and justify theories that explain or predict organizational and human phenomena regarding information system where as design science seeks to develop innovative artifacts. This research follows behavioral science paradigm since the objective of the study is identifying impacts of technological transformation and organizational resistance to wards technological transformations on organizational performances in public service sectors.

#### 3.1 Research Design

Research design is a blue print to conduct a research study, which describes what research approach to follow, the target population, sample size and method, and tools of data collection and analysis used to answer the research question. In general the function of a research design is to ensure that the evidence obtained enables the researcher to answer the research questions as unambiguously as possible (Kotari, 2004). In this research descriptive research specifically survey research was used, because it enables the researcher to identifying the current situation of impacts of technological transformation and resistance toward technological transformations on organizational performance in selected public service sectors (Kotari, 2004). Moreover (Zegeye, et.l., 2009) stated that “Surveys gather data at a particular point in time with the intention of identifying the nature of existing conditions.

### **3.1.1 Research Approaches**

The selection of research approach is depends on the research problem, research questions and the objectives of the research. According to (Kotari, 2004), there are three approaches to conduct a research: qualitative, quantitative and mixed approaches. Quantitative approach involves the generation of data in quantitative form which can be subjected to rigorous quantitative analysis in a formal and rigid fashion. Qualitative approach to research is concerned with subjective assessment of attitudes, opinions and behavior. Mixed approach utilizes the strengths of both qualitative and quantitative research (Kotari, 2004).

So, in this research, both quantitative and qualitative research design was used to provide comprehensive understanding of the phenomena. Accordingly, in this study cross-sectional data survey was used. The reason for selecting a cross-sectional study is easier to conduct the research; collect all the necessary data at a single time from different geographical location (Kotari, 2004).

### **3.2 Study area/site**

The study area of this study is selected public services and private sectors organizations in Addis Ababa city. The reason why selecting public service and private sectors organizations from many public service and private sector organizations in Addis Ababa city is due to different geographical locations, time constraint and budget to get detail and relevant information on the issues raised in this study it was must to select samples organizations.

### **3.3 Population of the study**

The target population of the study was an IT staffs and non IT staffs like managers, change leaders, professional works at office of all six companies.

**Table 3.1: Target population**

No.	Organizations	Total Employees no.	Percentage
1.	Black Lion hospital main branch	104	2.9%
2.	Rift valley university main campus	186	5.3%
3.	Awash bank main office	356	10.1%
4.	Ethiopian Airport main branch	462	13%
5.	Ethio telecom main branch	2217	63%
6.	Awash Insurance company main office	200	5.7%
		<b>Total = 3,525</b>	<b>100%</b>

Source: own survey, 2018

## **3.4 Sampling techniques and sample size**

### **3.4.1 Sampling techniques**

In this study the researcher was used purposive and simple random sampling technique combination to select sample frame of public service sectors (six sector: Black Lion Hospital, Ethio Telecom main branch, Ethiopian Airlines main branch, Rift Valley main campus, Awash Insurance Company and Awash International Bank head office) from Addis Ababa city public services sectors. Those public services and private sectors are selected based on accessibility, more technological transformation applied sector, and their willing to participate in the study. Then the researcher was used stratified sampling to select samples from different areas and types of employees in the organization, there are many types of employees such as IT staffs, management staffs, and non IT staffs. As the numbers of the population in different strata are not equal, proportional strata sampling techniques was used for conducting this study. Generally, the main study areas of the study were the selected public services and private sectors in Addis Ababa sub city.

### 3.4.2 Sampling size

To determine the sample size, formula of Glenn D. Israel from University of Florida was used.

First the author developed a formula for a large population (Israel, 1992):

#### Equation 1

This is valid where:

$$n_0 = \frac{Z^2 pq}{e^2}$$

$n_0$  = sample size

$Z^2$  = abscissa of the normal curve that cuts off an area  $\alpha$  at the tails ( $1 - \alpha$  equals the Desired Confidence level, e.g., 95%) = 1.96

$e$  = desired level of precision

$p$  = estimated proportion of an attribute that is present in the population, and  $q$  is  $1-p$ .

The value for  $Z$  is found in statistical tables which contain the area under the normal curve.

Then, the sample size determined for the large population have been used to determine sample size for a finite population. Therefore, the following formula is derived from equation 1:

#### Equation 2

Where  $n$  is the sample size and  $N$  is the population size.

$$n = \frac{n_0}{1 + \frac{n_0 - 1}{N}}$$

Hence, the sample size for the given population (3525) at  $e = \pm 5\%$ , confidence level = 95%, and  $p = 0.5$  (maximum variability)

#### Equation 1:

$$(1.96)^2 (.5) (.5) / (0.05)^2 = 385 \text{ given}$$

Finally, the sample size is determined using equation 2:-

$$\text{Sample size (n)} = 1 + \frac{\frac{385}{(385-1)}}{3525} = 347.56 = 348$$

Since the population size differs in each organization the population was organized in a stratum then, percentage of each stratum in regard to population size which is, 348 calculated and stratified proportional method used to calculate sample size for each organization.

Strata sample size calculation:  $n_h = \left(\frac{N_h}{N}\right) * n$

Where  $n_h$  is the sample size for stratum  $h$ ,  $N_h$  is the population size for stratum  $h$ ,  $N$  is total population size, and  $n$  is total sample size.

For pop (BLH),  $N_h = 104$ ,  $N = 3525$ , and  $n = 348$

$$n_{BLH} = \left(\frac{104}{3525}\right) * 348 = 10.56 = 11$$

For pop (ETC),  $N_h = 2217$ ,  $N = 3525$ , and  $n = 348$

$$n_{ETC} = \left(\frac{2217}{3525}\right) * 348 = 218.86 = 219$$

For pop (RVU),  $N_h = 186$ ,  $N = 3525$ , and  $n = 348$

$$n_{RVU} = \left(\frac{186}{3525}\right) * 348 = 18.36 = \mathbf{19}$$

For pop (AIB),  $N_h = 356$ ,  $N = 3525$ , and  $n = 348$

$$n_{AIB} = \left(\frac{356}{3525}\right) * 348 = 35.15 = \mathbf{35}$$

For pop (AIC),  $N_h = 200$ ,  $N = 3525$ , and  $n = 348$

$$n_{AIC} = \left(\frac{200}{3525}\right) * 348 = 19.74 = \mathbf{20}$$

For pop (EA),  $N_h = 446$ ,  $N = 3525$ , and  $n = 348$

$$n_{EA} = \left(\frac{446}{3525}\right) * 348 = 44.03 = \mathbf{44}$$

Total= **348**

As the number of each organization population differ in size the sample size from each organizations are differ:

**Table 3. 2: sample size of each organization or strata**

No.	Organizations	No. population of each strata	Percentage	Sample size from each strata
1.	Black Lion hospital main branch	104	2.9%	11
2.	Rift valley university main campus	186	5.3%	19
3.	Awash bank main office	356	10.1%	35
4.	Ethiopian Airport main branch	462	13%	44
5.	Ethio telecom main branch	2217	63%	219
6.	Awash Insurance company main office	200	5.7%	20
	<b>Total</b>	<b>3,525</b>	<b>100%</b>	<b>348</b>

Sources: own survey, 2018

### 3.5 Data collection method and tools

In this research the researcher is used both primary and secondary sources of data, the secondary data collection was from literature reviewing. And two data collection instrument was used, namely questionnaires and interview.

#### 3.5.1 Questionnaire

Some of questions for questionnaire were adopted with major changes from (-Ameri, 2013) studied on “Assessing Resistance to Technological Change for Improved Job Performance in the UAE (Public Sectors)” in UK, Sanford University. And some of them are constructed based on the research questions and the objectives of the study. It has two sections (A and B). Section A was for collection of information on personal (socio-demographical) data of the respondents, whereas Section B consists of questions that elicited responses from the respondents on the Influences of technological transformation and organizations resistance to technological

transformation on organizations performances in public service sectors. And there is an open ended and closed ended type of questions formulated considering content validity by distributing sample questionnaires to questioners and editing based on their comments and other academicians.

### **3.5.2 Interview**

A structured and semi-structured interview was carried out with two employees; one from IT staff and one from non IT staff in each organization, which means total number of interviewee are fourteen (12) peoples. Because of time and budget constraints it is difficult to proceed interview with more than two employees in each public service organizations.

### **3.6 Data analysis and presentation methods**

After collecting the primary data, the quantitative data were analyzed by employing appropriate techniques of descriptive and inferential statistics using SPSS software tool. The qualitative data were analyzed using the techniques of open coding. The researcher was used SPSS statically tool for analyzing data. This facilitates to describe the demographic characteristics of the respondents and the firm; the influences of technology transformation; as well as the major most important factors for resisting changes of the technology in organizations using frequency, percentage, average, tabulation and graphs and the influences of technological transformation and organizational resistances on organizational performances also analyzed using this tool. And qualitative data was analyzed using thematic analysis method. The analyzed data was present in form of graphs and tables. The nature of the study is more descriptive study with summary for each and every tables and graphs. And also ANOVA was done for measuring the linear relationship between variables.

### **3.7 Validity and Reliability**

Validity and reliability are the two fundamental elements in the evaluation of a measurement instrument. Validity indicates the degree to which an instrument measures what it is supposed to measure (Kotari, 2004). After developing the data collection instrument, it was forwarded to two researcher as well as two academicians for comment. And also distributed to some respondents and updated it based on their feedbacks.

## Chapter four

### 4.0 Results and Discussion

#### 4.1 Introduction

This chapter presents an analysis of the data obtained from the questionnaires and the semi-structured interviews undertaken from respondents. This chapter starts with an analysis based on the results from the interviews and the questionnaires. Analysis is undertaken based on the respondents' demographic features, description of statistical and ANOVA methods using SPSS version 20. The descriptive statistical method was used for each question presented in the questionnaire including for the personal information of the participants and why technological transformation need in organization, its influences on performances of organizations, the reasons for resistance to technological changes and its influences. The results of the analysis are presented in tables and pie charts. The test of reliability and validity and the ANOVA is also presented.

#### 4.2 Self administrative questionnaires result

The self-administered questionnaire included questions relating to personal information on the participants such as age, gender, educational level, year of works (experiences), company name, and position and then there were additionally a total of 27 major questions to elicit influences of technology transformation, reasons for employee resistance to technology changes, and the influence of both technological transformations and organizational resistances on organizational performances. In addition, the researcher attached a covering letter to give participants an indication of the research problem and the reason behind undertaking this questionnaire. The covering letter also included information for participants on some ethical issues concerning protecting participants' identity such as keeping their identity confidential, destroying their submitted hard copy and emphasizing that it was their choice to participate in the survey or not (see Appendix A).

After obtaining the acceptance of the participants to participate the researcher distributed the questionnaire by hand to the participants. Furthermore, the researcher checked with the participants concerning the clarity of the questions included in the questionnaire. Next the researcher approached each company in order to arrange an appointment with the Head of the section of Human resources development (HRD) in each company and discussed with them the need for the research additionally they arranged appointments for structured and semi-structured interviews with manager and IT staffs.

The researcher distributed 348 questionnaires to participants in six organizations, mean that three public service sectors ( Ethio Telecom, Ethiopian Airlines and black Lion Hospital) and three private sectors (Rift Valley University, Awash Bank, and Awash Insurance company) in the Addis Ababa city organizations. was able to gather a total of 295 filled in questionnaires, of which 287 (82.5%) were filled properly and were considered for analysis. From this analysis the researcher was able to identify the influences of technological transformation on organizations performances and the reasons for employee resistance to technology change, influences of organizational resistances on organizational performances. However, in order to gain a deeper understanding of the issues there was a need for further investigation. For this the researcher approached the manager and IT staff of the companies to conduct structured and semi- structured interviews with them (see Appendix B). Details of the interviews are discussed later in this chapter. The SPSS tool was used to analyze the gathered data for effectiveness and efficiency.

The questionnaire aimed at identifying the major influences of technological transformation and organizational resistance to technological changes on organizational performances. Moreover, the researcher conducted interviews with the respondents after collecting the questionnaire to understand how those influences organizational performances in the companies.

### **4.3 Data analysis**

In this study the collected data is analyzed using Statistical Package for the Social Sciences SPSS version 20 (SPSS). The SPSS is a computer package used for statistical analysis. Among the statistics included in the base software which are used in this study are:

- The Respondents' Demographic Features.
- Descriptive Statistics.

➤ Analysis of Variance (ANOVA).

The research's objective is identifying influences of technological transformation and organizational resistance to technological changes on organization performances in both public services and private sectors. Following the identification of a gap in the knowledge, this research then uses a combination of methods to bridge this gap in the knowledge. The inductive approach is used to illustrate and analyses the influences of technological transformation and reasons behind organizational resistance to technological change using self-administrated questionnaire and structured and semi-structured interviews with managers and IT staff. This approach is reused to evaluate employees' job performance or organizational performances in an environment where technological transformation is introduced and where there is organizational resistance towards technological changes. In the end, a combined approach allows the researcher to draw an overall picture of the investigation and to come up with a set of proposed solutions. Finally, conclusions and recommendations are made to provide fresh insights and ideas for applying the findings of the research in practice.

### **4.3.1. The Respondents' Demographic Features**

This section discusses the study findings with regard to the demographic features and the characteristics of the respondents in the six surveyed public services and servants sector companies.

#### **4.3.1.1 Respondents' Demographic Variables:**

The findings as presented in Table 4.1, Male formed 60.6 % of respondents and Female 39.4%. This shows that there is gender gap in the public services and servants sector in Addis Ababa, as show in below table number of male employees are greater than number of female employees in the sectors.

**Table 4.1: Respondents gender**

Gender		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	174	60.6	60.6	60.6
	Female	113	39.4	39.4	100.0
	Total	287	100.0	100.0	

Source: own survey, 2018

Regarding Age the following table 4.2 depicted that, 46% of the respondents fall in the age between 25 and 30 followed by 20 % of them between the age of 35 and 40 and 18.5% of between the ages of 30 to 35. This indicates that majority of employees in those sectors are at productivity and maturity level of age (25 – 35), which means that they are at the age range when one seek for better and effective life in organization and in their individual life, in spite of this the ages when struggling for development and growth, they know how technological life cycle goes through their year of life.

**Table 3.2: respondent age**

Respondents age		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<25	21	7.3	7.3	7.3
	between 25 and 30	132	46.0	46.0	53.3
	between 30 and 35	53	18.5	18.5	71.8
	between 35 and 40	60	20.9	20.9	92.7
	Above 40	21	7.3	7.3	100.0
	Total	287	100.0	100.0	

Sources: own survey, 2018

From the following table 4.3, considering education level of respondents 88.9 % of them had bachelor degree and 9.4% of them had degree of masters. And 1.7% of them had diploma.

**Table 4.3: Respondents educational level**

Educational level		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Diploma	5	1.7	1.7	1.7
	Degree	255	88.9	88.9	90.6
	MSc/PhD	27	9.4	9.4	100.0
Total		287	100.0	100.0	

Sources: own survey, 2018

The following table 4.4 shows respondents' work experience. The results indicated that 42.5% of the participants had work experience between 1 to 5 years. The second largest groups had 35.9% were those with 5 to 10 years' experience. Those with experience of less than one year are 12.5%. The results show that the majority of the respondents had good experience because 16% those the respondents were with >10 years of experience. This is significant in terms of the participants' perceptions on identifying the influences of technological transformation on organizational performance and also influences of employees resistances to technology changes on organizational as well as their perceptions on the performance in the companies as affected by resistance and transformation of technology.

**Table 4.4: years of work of respondents in company**

Year of work in company		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	< one year	16	5.6	5.6	5.6
	between 1 and five years	122	42.5	42.5	48.1
	between five and ten years	103	35.9	35.9	84.0
	above ten years	46	16.0	16.0	100.0
Total		287	100.0	100.0	

Sources: own survey, 2018

The following table 8, showed the distribution of the sample according to sectors. It could be seen that participants from Rift Valley University main campus represented 5.2%, Black Lion Hospital represented 3.5%, Ethio Telecommunication represented 62.7%, Ethiopian airlines

main branches represented 11.8% of the participants in the sample, Awash Bank represented 11.5% of the respondents, and, finally, Awash Insurance Company represented 5.2% of the respondents.

**Table 4.5: companies name where respondents work in**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	RVU	15	5.2	5.2	5.2
	Black lion hospital	10	3.5	3.5	8.7
	Telecommunication	180	62.7	62.7	71.4
	Airlines	34	11.8	11.8	83.3
	Awash bank	33	11.5	11.5	94.8
	Awash insurance company	15	5.2	5.2	100.0
Total		287	100.0	100.0	

Sources: own survey, 2018

### 4.3.2 Details on technological transformation and organizational resistances Influences on organizational performances

#### 4.3.2.1 Technological transformations and it influences on organizational performances

The following table 4.6 and figure 1 indicated the introduction of technology as new equipment or new process in those organizations, as depicted on the pie charts, 15.7% of respondent strongly agreed, 64.1% of the respondents agreed with the issues of technology introduced as new equipment or programs in the organizations they works, totally about 79.8% of the respondents agreed with, and 14.46% of respondents feel as neutral, 5.6 % of respondents disagree. This result indicate all of the public services and public servant organizations are focused on the technological transformations or newly coming technology and adopted it as new equipment or programs for their organizations. According to Eveleens, (2010), transformation comes from changes in technology and technology change has become an increasingly important topic over the past 20 years due to the fact that innovation is vital and significance for the survival of any organization, whether it is a public sector firm that needs to improve their services to public and attract attention or a private sector firm that needs to increase their market

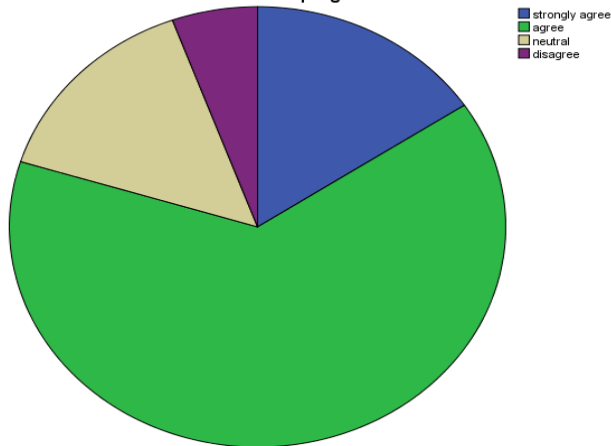
share, and also (Mark, 1987), illustrated that, introduction of new technology has become vital in all sectors so as to reduce cost and compete with the national and internal organizations.

**Table 4.6: company introduced new technology as new equipment or processes**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	45	15.7	15.7	15.7
	Agree	184	64.1	64.1	79.8
	Neutral	42	14.6	14.6	94.4
	Disagree	16	5.6	5.6	100.0
Total		287	100.0	100.0	

Sources (own survey)

1. Comany introduced a new technology in terms of new equipments or new programs



Sources: own survey, 2018

**Figure 1: company introduced new technology as new equipment or processes**

The following table 4.7 shows, influences of technological transformation on organizational performances.

As indicated in the table 4.7, benefits of technological transformation for individual employees in organizations, 2.4% strongly agreed, 24.7% agreed and 11.5% feel neutral, 45.3 % of respondents disagreed, 16% strongly disagreed. This indicates technological transformation has negative influences on individual employees in the organizations,

The Second, technological transformation influences negatively the employees of the organizations 11.1% of respondents strongly agreed, and 36.6% of respondents agreed and 26.6% of the respondents feel neutral. But 17.8% of the respondents disagreed, followed by 7.7% of the respondents strongly disagreed with the issues. From this result about 47.7% of respondents agreed with technological transformation influence negatively the employees of the organizations.

As the third row showed, need of technological transformation in company for individual employees and to increases performances, 51.9% of respondents strongly agreed following with 42.5% of respondents agreed. This indicated, in organizations technological transformation or changes are need because it helps individual employees and it increases performances of organizations.

**Table 4.7: Technological transformations and its influences on organizational performances**

<b>Technological transformations and its influences on organizational performances</b>	Strongly agreed	Agreed	Neutral	Disagreed	Strongly disagreed	Total percentage
Technological transformation benefited individually employees of an organization in their personal life	2.4	24.7	11.5	45.3	16	100.0
Technological transformations has negative impacts on individual employees in organization	11.1	36.6	26.8	17.8	7.7	100.0
Technological transformations need in organization for individual employees and to increase performance of organization	51.9	42.5	5.2	0.3	-	100.0
Technological transformations has negative influences on organization performances	35.5	46.3	14.3	2.1	1.7	100.0
Technological transformation benefited organization in improving performances	26.1	57.8	13.6	1.7	0.7	100.0

Sources: own survey, 2018

The following tables 4.8 and 4.9 shows, the last two rows indicates technological transformation and its negative influences on organizational performances and benefits of technological advancement for improving performances in organizations respectively; as the following table 4.8 indicated, 35.5% strongly agreed, and 46.3% agreed with the concept of ‘ technological transformations has negative impacts on organization performances’, 81% of respondents agreed with the negative impacts of technology on organizational performances in companies. According to (Mullins, 1999), technological changes will have an impact on an individual level particularly when an organization decides to privatize for the sake of improving performance in order to overcome violent competition.

**Table 4.8: Technological transformation has negative impacts on organizations performances**

		Frequency	Percent	Valid Percent
Valid	strongly agree	102	35.5	35.5
	Agree	133	46.3	46.3
	Neutral	41	14.3	14.3
	Disagree	6	2.1	2.1
	strongly disagree	5	1.7	1.7
Total		287	100.0	100.0

Sources: own survey, 2018

The following table 4.9 shows, the benefits of technological transformations in improving organizational performances, 26.1% of the respondents strongly agreed, followed by 57.8 % of the respondents agreed. This result indicated a technological transformation has positive influences in the organizations in case of performances. According to (Peters T. a., 2004), he suggested that sometimes the idea of resistance to change can be a good one as technology innovation or transformation has an important influence on organizational performance. However, technology change can be an originator that allows people to do innovative things. And also Technological improvements, alongside competition with global markets, are increasing extensively in all sectors and are creating opportunities in foreign markets which in turn can provide off-shore growth for companies’ future success (Brenda, 2001).

**Table 4.9: Technological transformation benefited organization in improving performances**

		Frequency	Percent	Valid Percent
Valid	strongly agree	75	26.1	26.1
	Agree	166	57.8	57.8
	Neutral	39	13.6	13.6
	Disagree	5	1.7	1.7
	strongly disagree	2	.7	.7
	Total	287	100.0	100.0

Sources: own survey, 2018

**4.3.2.2 Organizational resistances, reason of resistances and it influences on organizational performances**

The following table 4.10 first row shows, lack of required skill of change agents in organization to adopt newly coming technologies accordingly, 2.8% of respondents strongly agreed, 29.1% agreed, 10.5% feel neutral, 39.3% disagreed , and 18.2% strongly disagreed. This indicated no problems of the lack of required skill to adopt the newly coming technology.

The second one indicated, understanding of employees on the reason for new technology needed in their organizations, about 10.8% of respondents strongly agreed, and 41.8 % of respondents agreed, and 25.9% of the respondents feel neutral, 17.4% of the respondents disagreed and 3.8% strongly disagreed with the issues. This indicated more than half of the respondents agreed that an employee in a company knows the reason for introduction of new programs, systems or technologies accordingly.

The third one depicted, influences of resistances on employee’s loyalty to their work in companies, 11.1% of the respondents strongly agreed with, 51.9% of the respondents are agreed and 13.6% of the respondents are feel neutral, 18.1% of the respondents disagreed with and 5.2% of the respondents are strongly disagreed. According to (CHAPMAN, 2010), most employees oppose new technologies because they feel that change will not solve all the problems in one particular period of time.

The fourth shows existences of resistances from employees to technological changes while company introduced new technology, 20.2% of respondents strongly agreed, and 56.1% of respondents agreed. This indicates in company there were resistances of employees while introduction of new technology. According to (Prosci, 2002), resistance to change is a natural reaction and the integration of new technology causes concern for many employees. It is also important to see that resistance to change should be expected when the change is undertaken without involving employees.

The fifth indicates conflict between employee's expectations for their jobs and goals of company while introducing technological changes, 5.2% of respondents strongly agreed, 55.4% respondents agreed, the remaining 34.3% of the respondents categorized under neutral, disagreed and strongly disagreed. This result indicates that while company introducing technological transformation or changes there are conflicts between expectation of employees for their jobs and goals of the company. In order to bring in technological changes organizations have to put effort into training their employees which brings development in the job performance of an employee. HR changes include changes in the performance appraisal system which can be of benefit to both to the employee as well as the organization. It helps the organization to direct the employee towards organizational goals by letting employees know what is expected from them. A good assessment system also includes knowing the employees interests and motivating employees by bringing forward a positive attitude towards the organization (-Ameri, 2013).

The sixth one shows that, while introducing new technology organizations clearly defined implementation steps for employees, 3.8% of respondents strongly agreed, 16.4% agreed and 31% of the respondents fell neutral, about 43.9% of respondents disagreed and 4.9% strongly disagreed. This result indicated there are no clearly defined implementation steps in company for employees. This makes employees resist to changes in company.

The seventh indicates, suitable and practical procedures to overcome the resistance to technological transformations, 2.4% of the respondents strongly agreed, and 27.9% of the respondents agreed, 35.9% of respondents feel neutral, 24.7% of the respondents disagreed and 9.1% of respondents strongly disagreed. From this result 30.1% of respondents agreed and

30.8% of respondents disagreed, it indicates that no suitable and practical procedures to overcome the resistances to technological changes.

The eighth one depicted, the management looks for and solves the issues of employees during the technological changes, according (Imran, 2014), organizations have to initially identify the reasons, factors and driving forces for resistance to change and then plan and formulate strategies that help them to overcome such issues. Job performance effectiveness identified that by implementing the strategies such as reward policies, effective communication, motivation helped employees to overcome resistance to technology change. Further these strategies helped employees to eliminating errors, accomplishing task quickly, having control over work and effectively managing their work performance. Thus these identify the strategies chosen for overcoming resistance led to improving job performance effectiveness.

The ninth shows that, lack of necessary information, skills and adequate training of employees to accept the new technological change, 16.4% of respondents strongly agreed, 40.8% of respondents agreed and 15.3% of respondents feel neutral, 26.5% of respondents disagreed and 1.0% of respondents strongly disagreed. The result indicates employees lack the necessary information, skills and adequate training to accept the new technological change. As stated by (Bolognese, 2008), employees and managers can actively or passively resist change, but that resistance to change is inevitable. Training can assist employees in improving their performance and understanding levels, recognition and reward programs can improves the behavior, attitudes and skills that are needed for change to take place.

The tenth one shows, employees desire to keep the existing positions in the company, 16.4% of respondents are strongly agreed, 46.3% of respondents agreed, and 25.4% of respondents feel neutral, 10.5% of respondents are disagreed and 1.4% of respondents strongly disagreed. The result indicates employees desire to keep the existing positions in the company that is why they resisted technological changes. The results were showed respectively.

**Table 4.10: Reason for resistance towards technology and it influences on organizational performances**

<b>Reason for resistance towards technology and it influences on organizational performances</b>	<b>Strongly agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>Strongly disagree</b>	<b>Total percentages</b>
The change agent lack the required skills to adopt the new technological change in your company	2.8	29.1	10.5	39.3	18.2	100.0
employees understand why technological change is happening and why it's necessary	10.8	42.0	25.9	17.5	3.8	100.0
Resistance to technological change impact the employee's loyalty to the company	11.1	51.9	30.6	18.1	5.2	100.0
company introduced a new technology, there are resistance from the employees to the technological change	20.2	56.1	14.6	8.7	0.3	100.0
suitable and practical procedures to overcome the resistance to the technological transformations	2.4	27.9	35.9	24.7	9.1	100.0
There are clearly defined implementation steps for employees about the technological change process in your company	3.8	16.4	31.0	43.9	4.9	100.0
The management of the company look for and solve the issues of the employees during the technological change	4.5	39.4	25.4	24.7	5.9	100.0
Employees lack the necessary information, skills and adequate training to accept the new technological change	64.4	40.8	15.3	26.5	1.0	100.0
Employees desire to keep the existing positions in the company	16.4	46.3	25.4	10.5	1.4	100.0
Training given with supporting materials to create confidence with system and the processes	0.7	22.6	31.4	36.9	8.4	100.0
Ideas openly communicated and encouraged within organization about implementation of technological change	4.9	23.7	27.5	39.7	4.2	100.0
There are long periods of planning before the technological change is delivered	0.7	24.5	28.0	37.8	9.1	100.0
There are conflict between the employees' expectations for their jobs and the goals of your company within the new technological change	5.2	55.4	11.1	25.1	3.1	100.0
Employees have the fear of the uncertain outcomes of the new technological change	13.9	49.8	6.6	25.8	3.8	100.0

Sources: own survey, 2018

The following table 4.11 shows, employees perceptions to technology transformations that they are comfortable with existing technology and routine procedures, 2.4% of the respondents strongly agreed, 51.9% of respondents agreed and 15.7% of respondents feel neutral, 23.3% of respondents disagreed and 6.6% of the respondents strongly disagreed. The results indicated employees in the companies are comfortable with existing technology and routine procedure than facing difficult situation with new technology to be implemented.

**Table 4.11: employees comfortable with existing technology**

		Frequency	Percent	Valid Percent
Valid	strongly agree	7	2.4	2.4
	Agree	149	51.9	51.9
	Neutral	45	15.7	15.7
	Disagree	67	23.3	23.3
	strongly disagree	19	6.6	6.6
	Total	287	100.0	100.0

Sources: own sources, 2018

The following table 4.12 shows, job performances while there are employee's resistances to technological changes or advancement, 7% of the respondents strongly agreed, and 35.3% of the respondents agreed, and 24.8% of the respondents feel neutral, 32.5% disagreed. The result indicated employee's resistances to technological changes affected job performances in organizations. It is accepted that change affects employees' performance and job satisfaction when employees are subjected to a change in their job profiles (Paul .M .S, 2006).

**Table 4.12: while there are employee's resistances to technological advancement, are there job performances**

		Frequency	Percent	Valid Percent
Valid	strongly agree	20	7.0	7.0
	Agree	101	35.2	35.2
	Neutral	71	24.7	24.7
	Disagree	93	32.4	32.4
	strongly disagree	2	0.7	.7
Total		287	100.0	

Sources: own survey, 2018

The following table 4.13 shows, fear of employees of uncertain outcomes of the new technological changes, 13.9% of respondents strongly agreed, 49.8% of respondents agreed and 6.6% of respondents feels neutral, 25.8% of respondents disagreed, 3.8 % of respondents strongly disagreed. The result indicated employee's fear of uncertain outcomes of new technology changes in their organization that's why they resisted technological transformation or changes. According to (Beer, 2000), change is happening faster than most of employees care to think about change or its importance. Most of the employees do not want change as they assume the premise that change will always have a negative impact. The main reasons for this resistance to change are fear of failure, fear of being made redundant and fear about an uncertain future.

**Table 4.13: employees fear uncertainty outcomes of the new technology**

		Frequency	Percent	Valid Percent
Valid	strongly agree	40	13.9	13.9
	Agree	143	49.8	49.8
	Neutral	19	6.6	6.6
	Disagree	74	25.8	25.8
	strongly disagree	11	3.8	3.8
Total		287	100.0	100.0

Sources: own survey, 2018

The following table 4.14 shows, about training given in company to create confidence with new system or processes, 0.7% of respondents strongly agreed, 22.6% respondents agreed, and 31.4% of respondents feel neutral, 36.9% of respondents disagreed, and 8.4% of the respondents strongly disagreed. This result indicated there were no training given with supporting materials to create confidence with new system and process in the companies.

**Table 4.14: Training given with supporting materials to create confidence with new system or process**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	2	.7	.7	.7
	Agree	65	22.6	22.6	23.3
	Neutral	90	31.4	31.4	54.7
	Disagree	106	36.9	36.9	91.6
	strongly disagree	24	8.4	8.4	100.0
Total		287	100.0	100.0	

Sources: own survey, 2018

The following table 4.15 shows, about ideas openly communicated and encouraged with organization about implementation of technological changes, 4.9% of the respondents strongly agreed, 23.7% of the respondents agreed, and 27.5% of the respondents fell neutral, 39.7% of the respondents disagreed and 4.2% of respondents strongly disagreed. This result indicated, ideas openly communicated within organization about implementations of technological changes are not done properly in those companies.

**Table 4.15: Ideas openly communicated and encouraged within organization**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	14	4.9	4.9	4.9
	Agree	68	23.7	23.7	28.6
	Neutral	79	27.5	27.5	56.1
	Disagree	114	39.7	39.7	95.8
	strongly disagree	12	4.2	4.2	100.0
Total		287	100.0	100.0	

Sources: own survey, 2018

The following table 4.16 shows, long periods of planning before the technological change is delivered, 0.7% respondents strongly disagreed, 24.5% of respondents agreed, and 28.0% of respondents are feel neutral, 37.8% of respondents are disagree and 9.1% of respondents are strongly disagreed. This result indicates there were no long term planning before the technological changes was delivered.

**Table 4.16: long periods of planning before the technological change is delivered**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	3	1.0	1.0	.7
	Agree	70	24.4	24.4	25.2
	Neutral	80	27.9	27.9	53.1
	Disagree	108	37.6	37.6	90.9
	strongly disagree	26	9.1	9.1	100.0
Total		287	100.0		

Sources: own survey, 2018

#### 4.3.2.3. Measure of organizational performances

The following table 4.17 shows, job performances while there are employee's resistances to technological changes or advancement, 7% of the respondents strongly agreed, and 35.3% of the

respondents agreed, and 24.8% of the respondents feel neutral, 32.5% disagreed. The result indicated employee's resistances to technological changes affected job performances in organizations. It is accepted that change affects employees' performance and job satisfaction when employees are subjected to a change in their job profiles (Paul .M .S, 2006).

The second one, in organizations with new technology work task accomplished quickly, 34.8% respondents strongly agreed, followed with 47.4% of respondent's agreed. This result indicates in organization introduced technological changes or new technology helps organizations to accomplished work task quickly.

The third one, technological changes reduce the total errors, 8.1% strongly agreed, 24.9% agreed, 34.4% feel neutral, 32.6 disagreed. This indicates technological changes cannot total reduce errors. The results were shown respectively.

**Table 4.17: Measurements of performances in organization with technological transformation and organizational resistances**

measurements of performances of organization with technological transformations and organizational resistance	Strongly agreed	Agreed	Neutral	Disagreed	Strongly disagreed	Total percentages
Employees resist the technological change, is their job performance in the company affected	7.0	35.3	24.8	32.5	0.3	100.0
Work tasks accomplished quickly with new technologies	34.8	47.4	13.6	4.2	-	100.0
Technological change reduce the total errors	8.1	24.9	34.4	32.6	-	100.0
Technological change improve the quality of work	44.9	42.9	10.5	0.3	1.4	100.0
company able to control the work and process more efficiently with new technologies	10.5	53.0	22.0	14.3	.03	100.0
Technological change increase the efficiency and productivity of the employees in the company	25.8	52.3	7.7	10.1	4.2	100.0

Sources: own survey, 2018

The following table 4.18 shows, work quality improvement with technological changes, 44.9% respondent's strongly agreed, followed with 42.9% respondents agreed. This result indicates technological change introduced in company helps to improve quality of works of company. New technology and new procedures should be learned in order to improve productivity and quality in the workplace. It is essential for managers to implement "innovative" training sessions so that they can build a strong environment in the organization. These training sessions could provide a kind of motivation for their employees to improve their performance and achieve the organizational goals effectively (-Ameri, 2013).

**Table 4.18: Technological changes improve the quality of works**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	129	44.9	44.9	44.9
	Agree	123	42.9	42.9	87.8
	Neutral	30	10.5	10.5	98.3
	Disagree	1	.3	.3	98.6
	strongly disagree	4	1.4	1.4	100.0
Total		287	100.0	100.0	

Sources: own survey, 2018

As the following table 4.19 indicated, technological advancement increases efficiency and productivity of the employees in company, 25.8% of respondent strongly agreed, 52.3% of respondents agreed. This indicates in a company technological advancement is need to increases efficiency and productivity of the employees in their works.

**Table 4.19: Technological change increase the efficiency and productivity of the employees in the company**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agreed	74	25.8	25.8	25.8
	Agreed	150	52.3	52.3	78.0
	Neutral	22	7.7	7.7	85.7
	Disagreed	29	10.1	10.1	95.8
	strongly disagreed	12	4.2	4.2	100.0
	Total	287	100.0	100.0	

Sources: own survey, 2018

The following table 4.20 shows, with new technology companies able to control the works and processes more efficiently, 10.5% of respondents strongly agreed, and 53% of respondents agreed. The result indicated company able to control works and processes more efficiently with new technologies. One of the important job performance indicators is control over work. According to (Mathieu, 2000), control over the work environment is done internally or externally. The internal focus on control are the indicators of long term career success, such as promotion, training and development of reward systems etc. which helps an organization in providing quality of service and brings success by achieving its goals quickly. External job control indicators include creating job opportunities which will help an organization's employees and individuals in avoiding stress. It is necessary for the government and organizations to provide employment opportunities for individuals as this brings overall development for the organization as well as for the nation.

**Table 4.20: company able to control the work and process more efficiently with new technologies**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	30	10.5	10.5	10.5
	Agree	152	53.0	53.0	63.4
	Neutral	63	22.0	22.0	85.4
	Disagree	41	14.3	14.3	99.7
	strongly disagree	1	.3	.3	100.0
Total		287	100.0	100.0	

Sources: own survey, 2018

### 4.3.3 Inferential statistics

#### 4.3.3.1 Analysis of Variance (ANOVA)

The aim of the ANOVA was to identify the possible relationship between technological transformation and organizational resistance to technological changes with organizational performances. In addition, the ANOVA helped the researcher to generate a wide range of information that could support the analysis of gathered data.

#### 4.3.3.2 Reliability and validity test

Reliability is the extent to which an experiment, test, or any measuring procedure yields the same result on repeated trials without the agreement of independent observers able to replicate research procedures, or the ability to use research tools and procedures that field consistent measurements. Validity refers to the degree to which a study accurately reflects or assesses the specific concept that the researcher is attempting to measure. While reliability is concerned with the accuracy of the actual measuring instrument or procedure, validity is concerned with the study's success at measuring the validity. Validity is one of the major concerns in research. Validity is the quality of a research that makes it trustworthy. Scientific validity is the use of scientific methods in research to make the research logical and acceptable.

Reliability of the survey is one of the requirements that should be fulfilled. As can be seen in table 4.21, the Cronbach's alpha test result is .798, which indicates that there is high level consistency among the items.

**Table 4.21: Overall reliability test**

<b>Reliability Statistics</b>		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.798	.818	27

Sources: own survey, 2018

The following table 4.22 shows that, there is a correlations between, technological transformations and organizational resistances towards technological advancements, between technological transformations and organizational performances and lastly between organizational resistances towards technological transformations and organizational performances. A positive value of correlation coefficient  $r$  indicates positive relationship between variables and negative values indicates negative relationship between variables. And zero value of  $r$  indicates no relationships between variables. The values of the three variables respectively (( $r=0.670$ ,  $p=0.000$ ), ( $r=0.217$ ,  $p=0.000$ ) and ( $r=0.186$ ,  $0.002$ )) statistically significant. From this table the linear relationship between technological transformation and organizational resistance is strongly positive linear relationship, as it  $r$  values closer to 1, which is 0.670. The linear relationship between technological transformations and organizational performances is positive relationship as their  $r$  value 0.217. And there is slightly positive relationship between organizational resistances and organizational performance as  $r$  is 0.186.

**Table 4.22: Correlations**

		Correlations		
		Technological Transformation	Organizational Resistances	Organizational Performance
Technological Transformation	Pearson Correlation	1	.670**	.217**
	Sig. (2-tailed)		.000	.000
	N	287	287	287
Organizational Resistances	Pearson Correlation	.670**	1	.186**
	Sig. (2-tailed)	.000		.002
	N	287	287	287
Organizational performance	Pearson Correlation	.217**	.186**	1
	Sig. (2-tailed)	.000	.002	
	N	287	287	287

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

c. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

The following table 4.23 shows that, all three variables has statistically significant results, as p values of the cochran’s test is less than 0.05, which is 0.000.

**Table 4.23: ANOVA with Cochran’s test**

ANOVA with Cochran's Test						
		Sum of Squares	Df	Mean Square	Cochran's Q	Sig
Between People		427.205	287	1.499		
	Between Items	514.370	7	73.481	604.369	.000
Within People	Residual	1189.505	1995	.596		
	Total	1703.875	2002	.851		
Total		2131.080	2287	.932		

Grand Mean = 2.14

As shown in following table 4.24 the interaction of the two independent variables (technological transformations and organizational resistances toward technological changes) has a statistically significant effect on the dependent variables organizational performances, as the interaction p

value= 0.047, which is less than 0.05. But independent variables, technological transformation and organizational resistances toward technological transformation separately have no significant effect on organizational performances as their p values=0.372 and 0.150 respectively, which are greater than 0.05.

**Table 4.24: Test of between subjects effects**

**Tests of Between-Subjects Effects**

Dependent Variable: organizational performance

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	1507.306 <sup>a</sup>	170	8.867	1.380	.032
Intercept	17395.205	1	17395.205	2707.425	.000
Technological Transformation	112.144	16	7.009	1.091	.372
Organizational Resistances	300.432	36	8.345	1.299	.150
Technological Transformation * organizational Resistances	1035.207	118	8.773	1.365	.047
Error	745.300	116	6.425		
Total	50237.000	287			
Corrected Total	2252.606	286			

a. R Squared = .669 (Adjusted R Squared = .184)

**Table 4.25: Test of homogeneity**

**Levene's Test of Equality of Error Variances<sup>a</sup>**

Dependent Variable: organizational performance

F	df1	df2	Sig.
3.206	170	116	.000

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Technological Transformation + organizational Resistances + Technological Transformation \* organizational Resistances

Sources: own survey. 2018

From the above table 4.26, there is no homogeneity of variances of the dependent variable across groups. Because as the  $p$  value is less than 0.05, which is the level set for alpha.

#### 4.4 Qualitative Data Analysis

In addition to the quantitative study, qualitative data analysis is conducted to supplement and enrich the findings of the survey. Accordingly, interviews have been conducted with 12 respondents those are 6 (six) management members and 6 (six) IT staff members, to gather data regarding technological transformation and its influences on organizational performances and organizational resistances to technological changes and its influences on performances of organizations. Moreover, it is also helpful to discuss technological transformation and its influences on performances of organization related issues that public services and public servant sector companies faced during introduction of newly coming technology. Accordingly, the interview output has been analyzed by conducting open coding as presented below.

The questions raised for the IT staff were, why introducing new technology or advanced technology in company, perception of employees towards the introduced new technology, difficulties exist to adopt the transformed technology in organizations:

As one of interviewee said, *“Organization is more focused on newly coming technology to make their organization more productive and effective in services giving and to be competitive with others.”* Two of interviewee from the IT staff said, *“There are some complains towards new technology introduced in organization from employees and also managers. The causes of this complain is employee’s fear of loss of jobs and also position. And if any things happened to the advanced technology, processes or systems it is difficult for maintaining simple, it requires skilled maintainer; this required time and cost.”* As mentioned by interviewee there are resistances raised while introduced new technology in their company, the causes of the resistances was: lack of required skill, no programmed training was give, no long period planning for the changes, so employees fear of loss of job, power or positions in company and they also fear uncertainty outcome

The second point rose were strategies taken to solve the difficulties to adopt transformed technology in you company, the influences of the technological transformation in organization on performances:

As the other two interviewee from IT staff said, *“most of the time; in our organization training given as awareness giving system for employees of the organization about transformed technology, but no one checked the effectiveness of the training and opining of the employees towards the changes.”* As they said, there is a training plan but they can’t consider the feeling and acceptances of employees toward the issues. As they said *“They also work on employees to reduce resistances towards technology changes, but it is not matured strategies to overcome the resistances or opposes raised by employees. Because of this it is not essay for organization to adopted new technology.”* This means there are no strategic planning and works in organizations to overcome the resistances from employees well.

The last interviewee from IT staff said, *“Technological transformation has both positive and negative influences in organizations. The positive influences of technological transformations are: it increases competitiveness of organizations, improve work effectiveness, quality, create good environment for work control, cost reduction, time management, and etc.”* so all the above listed are the indicators or measurement of performances in organization. Generally technological transformation has positive influences on organizational performances, if and only if it is implemented or adopted accordingly and with full confidences of employees about the transformed technology, and also if it is customized in form of more easy for uses in our country.

Questions raised for management member were, effect of technological transformation on the ways of work flows in your company, Challenges the company faced with introduced transformed technology, effect of technological advancement and resistances toward it on organizations performances:

From management members one of interviewee said, *“The reality of transformed newly technology is for creating better work flows and quality services, at this time our company implement new system but every employees from management to lower employees struggle with this system, this means when there is clear communication, training, and before full implementing working with the old one parallel until all employees are familiar with newly one.”*

So there are many challenges in organization while changes are introduced unwillingness of employees, high cost needed for it, and etc.

One of the management members interviewee said, *“both technological advancement and resistance toward it has influences on organizational performances; technological advancement by itself one of major challenges at this time this means as it is expensive, required skilled manpower to run it, take time to made comfortable zone of the technology with employees.”* In this case it may affect the performances of the company while all what they have concerned on the transformed technology, and after organization decide to adopt it resistances from employees influences employees in negative direction, like the loss filling for work, the loss motivation to overcome difficulties in case of the newly technology. Due to all this factors the organizations work performance decreased and declined, also go out of competitiveness in the markets and service deliver when compared with other organizations.

The second question raised was, is employees benefited from technological changes in organization, positive and negatives influences of technology advancement for company:

As two of interviewee said, *“Aim of technological transformation is to benefit both organizations and individual employees in organization. But, now in our country the benefit of advanced technology for individual employees was not clear seen, than it makes employee’s fear of loss of job, loss hope and confidences with changes introduced.* From this technological transformation have both negative and positive influences in organization and for individual employees in the company.

Generally, from the interview conducted with the interviewees, the researcher summarized that, organization is more focused on newly coming technology to make their organization more productive and effective in services. There are some complains towards new technology introduced in organization from employees and also managers. The causes of this complain is employee’s fear of loss of jobs and also position, they think like new technology reduces cost by reducing employees in company. Technological transformation has both positive and negative influences in organizations. The positive influences of technological transformations are: it increases competitiveness of organizations, improve work effectiveness, quality, create good environment for work control, cost reduction, time management, and etc. Generally

technological transformation has positive influences on organizational performances, if and only if it is implemented or adopted accordingly and with full confidences of employees about the transformed technology.

#### **4.5 Discussions**

The survey were addressed the research questions rose in the study accordingly using the analysis of data collected by questionnaires and interviews. The influences of technological transformations on organizational performances and individual employees according to this survey study are: help organizations stay competitive, enable companies to control their works and activities more efficiently. It helps to improve the work qualities, helps to accomplish work tasks quickly. Totally it increases and improves the company's performances level. It helps employees to develop new skill and knowledge on the base of advanced technology. When there are resistances towards technological transformations form the employees there is no performances increases. Because works are not done properly, loyalty of employees to their works decreased while resistances of employees rose on technological change. if it is not adopted, customized or implemented well with enough training for employees or users of the advanced technology it also hinder the growth of the companies and services delivered by the companies.

There are many reasons or causes of resistances towards technological transformation in companies; lack of matured and planned training for employees. Because of this employees fear uncertainty outcome, have no necessary information and skills to accept the transformed technology, no clear communication about implementation of advanced technology, fear of loss of works or positions in company. Lastly there are conflicts between employees' expectations and goals of companies within the transformed technologies. All those are what make employees resist technological transformation.

Technological transformations have significant influences on organizational performances and a resistance towards technological transformations has negative influences on organizational performances. They hinder the process of organizations, delaying work tasks. And make poor quality of works and slowdown employees' loyalty to their works in companies. This resistances to wards technology transformations affected overall performances of organization.

This study added new concept in the knowledge domain, about technological transformation and its need in organization for increasing organizational performances. Resistances towards transformed technology in organization hinder organizational performances and it makes organizations out of competition. According to (Charles, 2014), objectives of the study were to determine relationship between strategic planning and marketing planning capabilities on organizational performance in the manufacturing industry. His findings from the study revealed that strategic planning and marketing capability independently and jointly influence organizational performance. Also, there is positive interaction between performance variables (i.e resources availability, staff quality, productivity, sales revenue, financial strength, public image and good will). His result was relieved that technological innovations as strategic planning and marketing planning capability, the target organizations were manufacturing industry. In case this study focus on technological transformation and resistances toward it in organizations, targeting public services and private sectors organization.

And also as (-Ameri, 2013), study was only focused on the resistance towards technological changes and its impact on work performances in organizations, though the current study is focuses on identifying the influences of technological transformation and organizational resistances to toward technological change on organizational performances in public services and private sectors.

Finally the interaction of both technological transformation and resistances towards technological changes in organization has significant influences on organizational performances.

#### **4.6 Summary**

Generally the data presented and discussed above were focused on technological transformation and resistances towards it, and finally their combined influences on organizational performances. The core ideas with all these variables were direct responses of respondents from the selected companies presented and discussed. As seen in those above discussion technological transformation has its own influences in companies and on individual employees in companies. And also resistances toward technological changes hinder the growth, goals, mission and vision of the organizations, this means while there are complains or unwillingness of employees towards advanced and transformed technology there were no increases of performances of organization.

## Chapter five

### 5.0 Conclusion and Recommendation

This chapter presents conclusions drawn from the study, some recommendations based on the evidences presented during the course of the study and also suggestions for future research

#### 5.1 Conclusion

About more than half of the respondents were male, in those companies participation of females are still not equal with male in the company. The majority of employees from those companies were in between 25 to 40 ages, most of the employees of the companies were in productivity ages. This helps the companies for improving their performances through highly concentrating on motivating employees for changes and effective works. Employees educational level were mostly bachelor's degree, they were not specialized with their field of profession or works. Company should have to specialize professionally workers more in their company for better performances. This had effect on any changes introduced and plays roles for minimizing resistances. Workforce resistance to proposed changes in job conditions was found to be lower in organizations employing higher shares of educated workers and also in smaller firms (Hugh Cronin, 2014). And years of works of employees influences their responses for the study, most of the employees has experiences above 5(five) years, this has well for the researcher that they have enough experiences in the companies. The level of experience among the staff and rates of pay was also of relatively importance in explaining resistance to proposed changes in job conditions (Hugh Cronin, 2014). Their response to the issues of technological transformation and resistances toward it in organizations has helpful for this study.

Technological transformations were introduced in companies as new equipment or procedures or systems. The companies introduced technological advancement for survival issues and competitions, whether public services or private sectors. Employees were not understood why advanced or transformed technology needed and why it's necessarily in the companies. Change agents groups in the companies have no required skills to do further with the new technology and adopted it accordingly. In case employees were also not informed or trained well and they are not effective with the new technology, this decreases the performances of the organizations.

Technological transformation benefited organization and employees in the organizations. According to (Imran, 2014), technological changes can be good changes as it has important influences on organizations performances and it plays vital role in growth companies offshoring future success. Technological transformation is need in organizations for improving works quality and performances. According to (D'Agostino, 2015), new technology should be learned in order to improve productivity and quality in workplaces and also it helps organizations to accomplished work tasks quickly and able to control works and process more efficiently with new technologies. Advanced technology helps organizations to control over the work environment internally and externally.

There are conflicts between employees expectations and organizations goals while introductions of transformed technology, according to (Bao, 2009), organization have to direct the employees towards organizations goals by letting the employees know what is expected from them , knowing the employees interests and motivating them. This can be benefited both employees as well as organizations. The reason for the resistances where: most of employees are comfortable with existing technology and routine procedures, than taking risks with newly coming technology. This is one of the challenges that lead employees to resisting new technology. According (Bao, 2009) even if resistances to changes is natural reaction, mostly it happened when the changes is undertaken without involving employees and its happened because of happing faster than most of employees care to think about changes and its importance's, or the always premises that changes will always have negative impacts. And some other factors where, lack of good and clear communication with in companies with employees about changes to be happened, fear of uncertainty outcomes of employees, no effective and clear training on the issues of transformation, lack of following and solving employees issue timely and accordingly. Lastly no long period planning for introducing technological transformations or changes, so change agent by them self not have clear ideas on the plan planned in short period of time.

## **5.2 Recommendation**

Based on the findings of this study and the conclusions drawn, the following recommendations are forwarded for practice and knowledge (further research).

The result of this study is expected to provide solutions and guidance's to managers, IT staff professionals and all employees of the selected companies; concerning core activities which can influence positively the introduction of new technology with mitigating the resistances to technological changes.

- It is important for organizations to take steps in order to avoid resistances, by planning for long period of time on changes of technology or introduction of new technology in organization. They should have to create awareness about the changes to be made, give appropriate training about the new technology until employees have felt confident. Thus training, communicating and motivating employees will help employees to be confident about the changes. And the company should have to encourage them to perform well and to overcome their fear of losing their jobs. Organizations should have to be clearer about the changes and can explain how globalization will benefit employees such as providing better career opportunities in terms of pay and bonuses.
- Communicating with employees regarding the present situation and the future desired state brings trust among the employees. New channels of communication should have to be established in order to avoid isolating some groups of employees about changes to be introduced. So that everyone in the organization should be able to access the information available and discuss it.
- Organizations should have to give chance for their employees for further study on their professional areas, this helps employees to seek for changes and struggling to overcome challenges and working with newly coming technology
- As technological transformation is need for increasing quality of work, increases effectiveness and efficiencies of works create good work environment, decrease cost, time and human power to be wasted, finally increases performances and competitiveness of organization; organization should have to focus on advanced technology and ready to overcome challenges occurred at introduction time, by creating skilled professional change agents. And they should have to customize new system or technology according to the goals of the companies.

### 5.3 Future research indications

As part of further future researches, the following are the researcher's suggestions for knowledge.

- ✓ As this study is a survey of many organizations including both public services and private sectors, for future case study on single sector for depth understanding issues.
- ✓ Comparison study between public and private sectors is more insight.
- ✓ Development of framework for those three variables: Technological transformation, Resistances toward transformed technology, and lastly organizational performances, there level of influences one on other and extraction of their factors.

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# Appendix

**Appendix A**  
**Addis Ababa University**  
**College of Natural and Computational Sciences**  
**School of Information Sciences**  
**Post Graduate Program**  
**Information Systems Track**  
**Questionnaire**

This questionnaire is part of a thesis project conducted by student of final year in MSc program at Addis Ababa University, School of Information sciences. This questionnaire is focused primarily on identifying the *Influences of technological transformations and organizational resistance to technological advancement on organizational performances* in Addis Ababa city public service and public servant organizations. There are many questions in this survey and it will take no longer than 20 minutes to complete the questionnaire. Your responses will be strictly confidential and data from this research will be reported only in the collective. Please make your answer by selecting the necessary item or writing an answer on the text line. Technological advancement is a term that is used to describe the overall process of invention, innovation and diffusion of technology or processes. Introducing a technological change in the Employer's operation is directly related to the introduction of a new equipment or information system that will result changes in the employment status or in working conditions of employees.

Your dedication is most valued and appreciated and I would like to take this opportunity to thank you in advance for your kind participation.

Simbo Ararsa

## 1.1 Socio -Demographic Information

1. Gender:

Male

Female

2. Age:

Less than 25 year old

Between 25 to 30 years

Between 31 to 35 years

Between 36 to 40 years

Above 40 years

3. Educational level:

Certificated

Diploma

Degree

Masters/ PHD

4. How long have you been working in the company?

Less than one year

From one year to five years

From five years to ten years

More than ten years

5. Name of the company-----

1.2 Details about Influences of technological transformations and organizational resistance to technological transformations on organizational performances.

1. The following set of questions is to identify the technological transformation and its influences on organizational performances in the company, please tick (√) in front of words that correspond with the degree of your answer.						
No.	Phrases/ degree of agreement	Strongly agree(1)	Agree(2)	Neutral (3)	Disagree(4)	Strongly disagree(5)
1.	company introduced a new technology in terms of new equipment's or new programs					
2.	Technological transformations has negative impacts on organization performances					
3.	Technological transformation benefited organization in improving performances					
4.	Technological transformation benefited individually employees of an organization in their personal life					
5.	Technological transformations has negative impacts on individual employees in organization					
6.	Technological transformations need in organization for individual employees and to increase performance of organization					
2. The following set of questions is to identify resistance, causes of resistances, the necessary strategies to mitigate the resistance to the technological transformation and influences of resistances to technological transformations on organizational performances in the company, please tick (√) in front of words that correspond with the degree of your answer.						

No.	Phrases/ degree of agreement	Strongly agree(1)	Agree(2)	Neutral (3)	Disagree(4)	Strongly disagree(5)
1.	The change agent lack the required skills to adopt the new technological change in your company					
2.	employees understand why technological change is happening and why it's necessary					
3.	Resistance to technological change impact the employee's loyalty to the company					
4.	company introduced a new technology, there are resistance from the employees to the technological change					
5.	suitable and practical procedures to overcome the resistance to the technological transformations					
6.	There are clearly defined implementation steps for employees about the technological change process in your company					
7.	The management of the company look for and solve the issues of the employees during the technological change					
8.	Employees comfortable with existing technology and the routine procedures					
9.	Employees have the fear of the uncertain outcomes of the new technological change					
10.	Employees lack the necessary information, skills and adequate training to accept the new technological change					
11.	Employees desire to keep the existing positions in the company					
12.	Training given with supporting materials to create confidence with system and the processes					

13.	Ideas openly communicated and encouraged within organization about implementation of technological change					
14.	There are long periods of planning before the technological change is delivered					
15.	There are conflict between the employees' expectations for their jobs and the goals of your company within the new technological change					

3. The following set of questions is to identify measure of performances in company, please tick (√) in front of words that correspond with the degree of your answer.

No.	Phrases/ degree of agreement	Strongly agree(1)	Agree(2)	Neutral (3)	Disagree(4)	Strongly
1.	Employees resist the technological change, is their job performance in the company affected					
2.	Technological change improve the quality of work					
3.	Technological change increase the efficiency and productivity of the employees in the company					
4.	Technological change reduce the total errors					
5.	work tasks accomplished quickly with new technologies					
6.	company able to control the work and process more efficiently with new technologies					

4. If you have any other information please write it here.-----  
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## Appendix B

### Interview questions

#### Questions for IT staffs

1. What is the intention of introducing technological transformation or advancement in your organization?
2. How employee's perception towards introduced technological changes?
3. Is there any difficult situation to adopt transformed technology in your organization?
4. How is resistance to new technology handled in your organization?
5. Before introducing a change due you give training? Is it effective?
6. What do you think are the causes for resistance to technological transformation?
7. What strategies do you think are effective to solve resistance to technological transformation?

#### For managers

1. Are technological changes or advancements affecting the ways of your works/work flow?
2. What are the challenges you faced with past technological changes introduced in you organization?
3. Is technological changes and resistance toward it affects organizational performances?
4. What are the main causes for resistance to technological transformation?
5. What strategies did you use to solve resistance to technological transformation?
6. Are employees benefited from technological transformation? If so how? If not why not?
7. What are the positive impacts of technological transformation introduced to your organization in the past?
8. What about the negative ones?