ADDIS ABABA UNIVERSITY

COLLEGE OF NATURAL AND COMPUTATIONAL SCIENCE

SCHOOL OF INFORMATION SCIENCE

EXPLORING THE IMPACT OF BUSINESS AND INFORMATION TECHNOLOGY STRATEGIC ALIGNMENT ON ORGANIZATIONAL PERFORMANCE: THE CASE OF ETHIOPIAN REVENUE AND CUSTOM AUTHORITY

By:

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SEPTEMBER, 2020

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A Thesis Submitted to School of Graduate Studies of Addis Ababa University in Partial Fulfilment of the Requirements for the Degree of

Master of Science in Information Systems

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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 citation giving explicit references. A list of references is appended.

Signature: _____

Ashenafi Mulugeta

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

Advisor signature: _____

Temtim Asefa (PhD)

DEDICATION

For all Ethiopian Orthodox Cristian religious followers based on their gratitude level they are praying for us or the country day and night without the limitation of social and geographical proximity.

To my beloved grandparents, Komos aba hayle Mariyam (aba Tsegay Erkyhun) and emahoy Worknesh Gebeyehu

To all dearest teachers, who teaches me by respective of courses, seminars, workshop and so like.

To all and everything (either positive or negative) around me shapes my life, which represented by time, people and location.

Glory for God, above all.

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ABSTRACT

We are now on the fifth generation (5G) world; every human activity interconnected with tremendous technological avenues. Here we can say informational systems play a vital role on the behalf of bridging the gap between business and IT world via internal integration and external adaptation. When we see the public organizations in Ethiopia, almost all have their own business strategies (like: vision, missions, 10 year's plan). But the fact on the ground indicated that, the alignment of business and IT strategies remain a challenging issue. The aim of this study is to assess the current statuses of business and information technology strategic alignment in public organizations and recommend solutions that increase organizational capability to utilize IT resources through BITA. The study used mixed modal research approach, the qualitative (like: interview, observation) and survey research method. For data analysis descriptive analysis and regression analysis were used. The main finding of this study is that, there is a documented IT and business strategy in ERCA but a strong strategic relationship is required. The guideline was developed based on the research finding result; it contains four variables which are: government policies, business strategy, IT strategy, business strategy and organizational performance. Government of the country is defining a sets of policies and give a direction to organizations to implement the governmental policies, the public organizations are defining their business strategy by considering or with in the domain of governmental policies and announce the strategies to sub working units (E.g. human resource, IT, finance department) of the organization, the information technology department (in the case of ERCA managements of information system (MIS) department) define the set of strategies to enable the objectives/ goals of ERCA by integrating the business needs and IT solutions, the levels of integration/alignment between organizational needs and IT solutions matter the organizational performance. In ERCA case, the research findings indicates that, there is a good level (according to Likert scale, level-4) of alignment between business and IT strategies were presented. Therefore, keeping a strong business and information technology strategic alignment plays an important and holistic role for the achievements of organizational goal. An organizations have the more business and IT strategy the more strategic alignment as well as the more organizational performance is performed. Furthermore, the survey on the interrelationship/alignment between business and information technology strategies should continue in multiple public organizations.

Keywords: *Strategy, Business Strategy, IT Strategy, Strategic Alignment, Government, Organizational Performance*

LIST OF ACRONYMS

BITA Business Information Technology Alignment

BSC: Balanced Score Card

CEO: Chief Executive Officer

CIO: Chief Information Officer

COBIT: Control Objectives for Information and Related Technology

CSM: Centralized Security Management

ERCA Ethiopian Revenue and Custom Authority

ERP: Enterprise Resource Planning

e-TAX: Electronic Taxation System

ETC: Ethiopian Telecommunication Corporation

LTO: Large Taxpayers Office

IMS: Information Management System

ITAS: Integrated Tax Administration System

ITIL: Information Technology Infrastructure Library

PESTLE: Political, Economic, Sociological, Technological, Legal and Environmental Analysis

SA: Strategic Alignment

SAM: Strategic Alignment Model

SAMM: Strategic Alignment Maturity Model

SAP: System Application and Products

SIGTAS: Standard Integrated Government Tax Administration System

SMART: Specific, measurable, achievable, realistic and time-related:

SWOT: Strength, Weakness, Opportunity and Treat

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CHAPTER ONE

INTRODUCTION

1.1 General background of the study

Information technology is not static in nature; it changed dynamically through time, human's day to day activities and by every business process. Information technology (IT) is changing the way businesses operate, the process of creating products and services for their customers, and the way in which they compete (Chebrolu & Ness, 2013). Before the concept of alignment, the terms information technology and information systems referred to the acquisition of hardware and software applications to cope with customer data (Ullah & Lai, 2013). Through time, information technology usage evolved in to the fields of business and data management, including data retrieval, data analysis and manipulation, and applications that were needed to process business data and nonscientific data (Ullah & Lai, 2013). A field of study was needed to establish the link between computer programmers/developers and the business world so that information-based applications could be developed for business and networks (Ullah & Lai, 2013).Information technology is changing the way companies organize their business processes, communicate with their customers and potential customers, and deliver their services. A key factor for a successful company is an effective and efficient alignment of the way IT supports business strategies and processes (Charoensuk, Wongsurawat, & Ba, 2014). Information technology is changing the way businesses operate, the process of creating products, services and corporate performance (Chebrolu & Ness, 2013).

Today, due to technological progress and the strong impact of technology on a wide range of business issues in different industries, including healthcare and life sciences, finance, business consulting, communications, transportation, civil engineering and urban planning (Alonso & Tovar, 2012). The alignment issue between business and IT is introduced since 1970 by scholars such as, Luftman & Brier (1999) and McLean & Soden (1977) claim that the importance of alignment has been well known and documented since the late 1970s(Solomon, 2018). Information technology became an inseparable part of business and industrial organizations in all sectors including government, healthcare, and education (Shamekh, 2008a).

To respond to a rapidly shifting business climate as well as deliver solutions that are tuned to the needs of the corporation as a whole, A sound strategic planning process is fundamental to achieving goals (Paper, 2008).

Business organizations have become heavily dependent on information technology services. However, achieving mature alignment between business and IT is difficult due to the rapid changes in the business and IT environments (Ullah & Lai, 2013).

In order to be competitive a company needs to be efficient and effective. Now there is a discussion about the fast changing business environment and the need for innovation and agility. Implementing the right systems in the right way becomes more and more crucial. Business-IT Alignment (BITA) refers to applying Information Technology in an appropriate and timely way where IT capabilities should be aligned with business demands and vice versa. Luftman had proposed a tool to measure the alignment, called Strategic Alignment Maturity Assessment around in 1970. But, still alignment is elusive and challenging issue for both the CEO and CIO. As a result of misalignment between business and IT, most firms could not achieve articulated return value form their huge IT investment. In Ethiopia, the financial sector has been investing a significant amount of money for strategic base IT solutions to achieve their goals by gaining competitive advantages over their competitor's. However, most Ethiopian banks do not have matured Business-IT alignment (Boasberg, 2019).

This paper primarily assess or explores the current state of strategies (both business and IT) with in public organizations and the alignment issue on a business need and implemented IT solutions which is offered from solution providers (local or out of the country service/product providers). As we see on the real environment, there are many private and public organizations in Ethiopia which are using an IT products/ services in order to sustain their multidimensional activities to get a better outcomes. Also some organizations in Ethiopia have their own business strategy and implemented IT solutions, unfortunately there is no customer/user satisfaction (no citation). We can see the hypothesis of scholars how it is difficult to align needs and solutions, "Attaining alignment between IT and business" as a pervasive problem. Although we have seen improvement, there are reasons why alignment is a persistent issue (Zhang, Chen, & Luo, 2018). This study is proposed, to investigate the current state of business-IT strategic alignment of public organizations, point-out the problems and to keep better recommendations for digital socio-economic developments of Ethiopia.

1.2 Motivations

According to the cases those we are faced on the real environment, collecting the tax and controlling the taxation system is the vision of ERCA (which is business strategy). But when we see the traders on the real market some merchants are implemented their own information system like point of sales, ERP and etc. to facilitate there task and pay the tax in a reliable manner, where as some merchants doing their business without the involvements of information system like cash register machine or software. When we are looking the fact, the exchange of goods are not performed only in commercial institutes but also it is done between people/institutions those are providing goods for sales (sellers) and peoples/institutes those are end users taking the product for their need (buyers). On the authorized body (ERCA) side try to implement an automated system like e-tax system to enhance the tax administrations activities. But still there is a grip between their annual plan and report. The government authorized body also mostly not initiate the taxpayers (sellers and buyers) by giving TIN and announcing the benefits of taxation with motivation factors. Such as by paying back 15% coast of individuals. Example: when we drink macchiato or eat raw meet in a bar, baying staffs from butik/ supper market and try to take other services we can research practically from how many of them we are received a receipt.

This thesis improves the role business and information technology strategic alignment on the performances of the organization.

1.3 Statements of the problem

Nowadays the bridge between business world and IT world turn into adhere each other. But still there is a gap between organizational needs and proposed IT deliverables. Business organizations are dynamic systems, in which all components need to be aligned to get results (Ullah & Lai, 2013). Users easily gets the IT knowledge through mobile applications, websites, offline desktop application, cloud based services and even social and electronic-medias like YouTube. While there is an alignment issue between organizational needs and implemented IT solutions. The alignment between business processes and supporting software systems is currently a top research issue (Alonso & Tovar, 2012). Organizations must follow up (coordinate) and continuously ensure that the process for aligning information technology and business is appropriately managed (Charoensuk, 2014). Most scholars studied about BITA by targeting private business companies, even if when we see the local studies about BITA most were focused on banking industries like: commercial bank of Ethiopia, Bank of Abyssinia. No more studies were performed on public or service organizations regarding to business and information technology strategic alignment especially in Ethiopia. The remarkable issue that should be suggested from

this study (maturity of BITA, the case of commercial bank of Ethiopia) weaklings to test with other organizations rather than financial industries (Solomon, 2018). In Ethiopia, most of large governmental organizations have their own documented vision and missions (we can say it is business strategy or organizational long term strategy). Also most organizations established an information technology department to achieve their business objectives via technology. The implemented Information System deliverables (like product, service) in a given organization: some are developed by local IT vendors, some others are developed from offshore companies, some are off the shelf product, and some are designed for the company from scratch.

Before we are going to implements an information system within the organization we have to clear or a closer look into the implementations of IT solution in a given organization, we can see gaps between core business objectives and IT (we have to propose the right solution for the right business need /gap). ERCA has an information systems department and they are doing an IT activates to support the goals of the organization but the question is if they are doing an IT activities on the proper way or IT departments enables the goals of the organization or not. Moreover, most companies change their work behaviors dynamically which force implemented technology to fail immediately. Such gaps lead to wastage of billions of birr investment in Ethiopia per year. According to (Charoensuk, 2014) some entities believes, the focus of IT valuation more to the cost side than to the benefits side.

Consequently, researchers have developed many models to explain how alignment generates value for organizations. But, these models use inconsistent definitions and measures of alignment). Several studies have examined the question of the initiation of strategic alignment in order to detect and minimize the gap between business and information technology strategies. Organizations need a mechanism to detect and close any alignment gap in order to proof that the relationship of their information technology and non-IT organizations be improved. Even though strategic alignment of business and information technology has proved to be very important, many organizations still struggle with it. The lack of business-IT understanding, unclear business-IT strategies, inefficient use of available IT personnel for the right tasks, inadequate training of business personnel to use the existing IT systems, failure to capture opportunities to learn from outside providers, lack of formal metrics and oversight to measure IT value, lack of time for personal skill development, and low perception of value of information technology that contributed to the low level of BITA maturity (Mekonnen, 2019). According to Menelek (2019), during strategy formulation, business and IT strategy has aligned on document. But, practically it is very different from the document and challenging task for both the business and IT units. CIOs

want to be more involved in business strategy formation however CEOs do not always believe that to be necessary. CIOs would also like to see more CEO involvement in information technology strategy formation but the CEO group believes that may not be necessary. A surprising proportion of CEOs perceive that business and information technology decision makers need only be involved in their own strategy formation process. Furthermore, the study found that business decision makers may not always be comfortable being involved in a strategy formation process outside of their own area (Alghazi, 2017). Information technology and business strategic alignment is significantly associated with organizational level performance measures. However, the effect of strategic orientation on the alignment and performance relationship is not as pronounced (Yayla & Hu, 2011). The previous studies focus mainly on private organizations in the educational field, or otherwise on linking strategic alignment to financial performance measures. This study has extended the analysis to public organizations, connecting it to both financial and non-financial measures. Compared to relative growth under developed country, Ethiopian government considered revenue gains insufficient and this indicates that there is a wide research gap that has to be assessed through providing detail understanding with implementation of the right business-IT strategic alignment framework in developing countries (King, 2018). The lack of national policies and standards are some of the important characteristics of information technology environment in developing countries. We have observed from the above listed fact that there are several and critical research gaps in business-IT strategic alignment in Ethiopia. This study was not concerned with private organizations which are their goals to make money as presented in multiple researches earlier, rather than it concerned on service organizations. Therefore, the survey focuses on investigating the existing status of business and IT strategies, how much employees are conscious about strategy, strategic fit between business and IT strategies as well as the impacts of alignment on organizational performance.

Research questions:

The following research questions are used to help the structuring of the analysis and for the presentation of the findings:

1. Where is the status of Business-IT strategic alignment in ERCA?
2. What is the level of BITA's impact on the organizational performance?

1.4 Objective of the study

Exploring the status of the BITA and its impact on the organizational performance, in order to enhance the awareness of organizations on strategies to improve performance via BITA.

Specific objectives

In responding to the above general objective, this research addresses the following specific objectives:

- ✓ To assess business and IT strategies of ERCA
- ✓ To assess the level alignment between IT and business strategies of ERCA
- ✓ To define the impacts of BITA in organizational performance

1.5 Scope of the study

This study mainly focused on investigating the degree of alignment between business and IT as well as defining the impacts of alignment on ERCA's performance to fill the gaps regarding to BITA (strategic level of BITA, which is long term (external) business and IT strategy domains (had been defined by Hundurson and Vanktraman), not including the infrastructure or internal strategies of business and IT). The study covers three branches of ERCA, which are head office (location: around Megenagna), MIS department office (location: Mexico) and one large taxpayer office (location: Debrezeit road infront of St. Yoseph church or Mullege Tawer, Addis Ababa). The data was collected by interview and questionnaire from both IT and business professionals'.

1.6 Significance of the study

The result of this paper have values for professionals' working in ERCA to know what is strategy means, to know the state their Business-IT alignment maturity level and to understand the benefits of strategic alignment for organizational performance. It creates an insight on the dynamic and major challenges that are deterring the Business-IT alignment and how to mitigate them. In addition, BITA helps managers to make a wise decision on IT investments.

Several prominent scholars found that business-IT alignment (BITA) have a positive relationship with organizational performance. The Luftman's strategic alignment model (SAM) was used as a bench mark for this study and the basic components of SAM was tested in the contexts of this study up to the developments of the proposed guideline and it helps for both CEOs' and CIOs' of ERCA.

The operational level of workers (e.g. programmers, network experts, etc.) in the organizations can get a clue how they perform the tasks based on the directions of the organization by referring the guideline.

So the research output could help for organizational leaderships (like board of directors, executive directors) to set their big vision and pushing the directions in standardized way, managements (like board of management, departments) guides for proper implementations of activities, supervisory managements (like divisions, branches) control the integration of implemented solutions, sections follow up or supervise the list of tasks based on their priority level and operational workers (like developers/ practitioners, budget planning officers, tax administration officers) profited to know the blueprint for a common understanding for their organizational performance business information technology strategic alignment.

This study used for organizations to make policies, standards, frameworks/models, etc. related to BITA.

The findings serve as a bench mark to assess the influences of BITA for firms performance for other or multiple public organizations in Ethiopia. The findings can add values to the existing body of knowledge regarding to BITA i.e. it can be used as an input for further IS research by the topics of alignment impacts on organizational performance. Strategic alignment and performance should be an attractive topic for researchers across governmental organizations.

1.7 Document organization

This document contains five chapters: chapter one includes introduction about the research topic, statement of problem (including research questions), motivation why this research area is selected, objective (general and specific), significance and finally scope and limitations of the study are discussed.

Chapter two: briefly discuss the research topic from varies sources such as prominent models, definitions, alignment dimensions, and theoretical concepts are discussed here.

Chapter there: briefly discuss the methodology parts of the study. Here, research design, single case study, data collection technique, hypothesis, validity as well as reliability and ethical considerations are briefly discussed.

Chapter four: Contains the analysis and interpretations of the collected qualitative or qualitative data and outputs from statistical tool (in the form of graph or table) and responses from targeted respondents. Also in this chapter the proposed model and hypothesis were presented. Reports

from the key findings (the collected data). The chapter contains desiccations of the collected data. In addition contains the details of the hypothesis results.

Chapter five: Conclude the research and providing recommendations based on the findings and also point out the future (to be) research topics.

CHAPTER TWO

LITERATURE REVIEW

2.1. Introduction

This chapter briefly presents a description of the basic concepts of BITA, business strategy, information technology strategy on the context of enabling/driving organizational performance by referring materials which are previously published on different knowledge bases such as: journals, seminar, conference papers, books, workshop and other related works from various sources to capture or gather the background knowledge about BITA. The study focuses on BITA and aims to present a general understanding of strategic alignment model and to address the BIA gaps (define the gap that makes barrier between business requirements and proposed IT solution). Further to determine how organizations can manage the strategic alignment between business and IT. The four frameworks was used in this chapter were: a framework developed by Galliers, which are general models that present the interrelationships of the IT strategy components, a framework is business-IT strategic alignment model developed by Henderson and Venkatraman, which is a specific model that shows the interrelationships of business strategy and IT strategy and their corresponding organizational and information technology infrastructures and processes, the third framework is Business-IT alignment gap developed by Ward and Peppard, which is a specific model that shows an alignment gap between business strategy and IT strategy and the fourth model is strategic alignment maturity model developed by Luftman, which represents the criteria/ variables to be considered on strategic alignment.

2.2 Strategy

Strategy is a management (planning) concept that is defined as an elaborated and systematic long term plan of action designed to achieve the basic long-term objectives or a particular goal of an organization or an enterprise (Shamekh, 2008b) Strategies may exist for the entire organization, for a division, department or branches, and for a product, project, or iteration (International Institute of Business analysis, 2015)

Some definitions of strategy are presented, according to Henry. Strategy as plan, referring to some kind of deliverables planed course of actions, a collection of instruments for coping with a situation. Strategy as sequence, which precisely refers to a sequence in a series of actions. Strategy as position , specifically a means of locating an organization in a dynamic business

situation, where strategy becomes the mediating force between the organization and its business environment, that is, between internal and external context (Shamekh, 2008b)

Strategy is defined as a framework within which the choices about the nature and direction of an organization are made. The main strategic concepts can be divided into two perspectives; the first perspective is concerned with the internal resources and activities, and how to promote them to achieve the desired position and competitive advantage, and the second perspective is concerned with the external factors which influence the organization's position and decisions (*Amare*, 2013).

Determining a company's basic long-term objectives, and implementing course of action and allocating the resources' requires to achieve those objectives (Nemeroff, 2014). Strategy is a broad-based model for how business should succeed, what its objectives should be, and what policies are required to achieve those goals (Shamekh, 2008b). Therefore, strategy means just like a road map and it show about where we started and ended.

2.3 Business Strategy

Business strategy is the means by which businesses achieve their objectives which take the form of long-term plans relating to the chosen markets, products and environment. It covers the choices affecting the positioning of the firm among its competitors (Abdul, 2014) A business strategy is an analytical management tool used for planning a future business path. It addresses the internal and external business market climate, the strategic approach to competition, vision and distribution of company resources and which calls on strong engagement in its formulation and implementation (Gartlan & Shanks, 2007).

By aligning business strategy with identifiable metrics and then increasing performance through reengineering the information process, each decision area starts to witness an increase in capabilities and a profound streamlining of business efficiencies. These teams begin to see success building, which helps to develop their passion and engages them in the strategy (Boyer, Frank, Green, & Harris, 2010).

Our organizations are leaders in their respective market sectors, and we believe that our ability to get insight and visibility into the information that matters is indeed one of the strong enablers of our success. These systems help to enable our teams to discover new opportunities, improve processes, and make better, more informed decisions while reducing overall operational costs (Boyer, 2010).

2.3.1 The need for business strategy

When implementing information technology, organizations are expecting to adopt information technology strategies in an effort to make a decision and accordingly employ the technology as an enabler to the effectiveness of organizational goals and objectives. And an information technology strategy is encouraged to be aligned with the business strategy in an effort to enhance the performance of the organizations (Mohamed & Khalifa, 2016).Therefore, the business strategy is very important to drive any change with in and out of the organization.

Business expansion is a goal which cannot be achieved without strategy. You should be able to set aside budget and recruit suitable individuals for market analysis who can not only collect and collate data, but also evaluate patterns to help you find untapped niches (Mekawy, Rusu, Perjons, Sedvall, & Ekici, 2015).

2.3.2 Government's impact on business strategy

Government regulation has a direct and indirect impact on organizations performance through crowding effects on intrinsic and extrinsic motivations. The total effects are equal to the sum of the direct and the indirect effects of government regulation (Graafland & Bovenberg, 2020). Government pol icy has always had a significant influence on economic growth and new business formation. Most efforts to stimulate business creation and expansion have been in the form of tax incentives. While preferential taxation, such targeted capital gains reductions and investment tax credits can be helpful , other, sometimes more understated policy factors of predictability that can be more appealing (Bryan, 2013).

In the creation of strategic formulation, inter-organization productive associations and all kinds of links, government has played an important role. Government policy moderates the effectiveness and political feasibility of national policies, for macroeconomic policy. Government's impact on the business environment and strategic management. This understanding stimulates managers to play a significant role in shaping government policies that enhance the national diamond in their business and in that way the competitive advantage of their organization (Bosch & Man, 1994).

2.4 IS strategy

Information system existed and used in organizations to manage business long before the advent of information technology (Ward and Peppard, 2002), and most IS where exclusively data-oriented with the primary purpose to store, retrieve, manipulate, and display data (Andriole, 2002). IS can be defined as a system that includes persons and data records and management activities for managing and processing information, usually computer-based data processing system (computer-based information systems) (Shamekh, 2008a).

IS involves the planning, analysis, design and maintenance of computer-based information systems used to process information. So, a prearranged structure of interrelated components that is concerned with the purposeful utilization of information technology (Ward and Peppard, 2000).

It is an engineering term, it has been defined as : "IT refers to a wide variety of items and abilities used in the creation, storage, and dispersal of data and information as well as in the creation of knowledge (Shamekh, 2008a).

Information technology is now expected to add value to the enterprise not only by responding to business requests but also by creating business opportunities through innovative combination of IT capabilities with customer needs and requirements and also it can be an enabler of new business strategies (Ward & Peppard, 2002). As a result, the role of IT is enhanced to strategic and have an impact on business strategy shaping (Henderson & Venkatraman, 1993). Hence, IT strategy is now more important than ever, with flexible information infrastructures being a requirement for any organization hoping to grow efficiently and effectively (Boasberg et al., 2019)

It is a planning process for the development of systems towards some future vision of the role of information systems in the organization. IS strategy defines the organization's demand for IT the requirements or 'demand' for information and systems to support the overall business strategy. It brings together the business aims of the organization, a clear understanding of the information needed to support those aims, and the implementation of computer systems to provide that information.

According to Shamekh (2008b), the framework of the information system strategy developed by Robert, IS strategy, where it contains the concept of change management, which is an important issue in business and IT. The framework consists of interacting components that connect to create the IS strategy has proved valuable in understanding to the organizational hierarchy of the IS strategy interrelated components and their relationship with the business strategy. These

components are represented in: information strategy, IT strategy, information management strategy, and change management or implementation strategy. This framework shows the central role that information strategy plays in linking business and information systems strategy processes. It illustrates the core line of business-related strategies and the interrelationships between the components of IS strategy. It can be noticed that, based on Galliers's view in his conceptual framework of IS strategy, the technological issues, addressed by the IT strategy, and the infrastructure issues, addressed by the IT Management strategy, are secondary to the core business strategies.

2.4.1 IT Strategy

Information technology strategy is concerned mainly with technology policies, and outlining the vision of how the organization's demand for information and systems can supported by technology essentially and it is concerned with information technology supply (Mohamed & Khalifa, 2016). Information technology strategy addresses the provision of IT capabilities and resources (including hardware, software and telecommunications) and services such as IT operations, systems developments and user support (Ward and Peppard, 2002). Basically, IT strategy is concerned with preferred methods, security level, mandated systems, the applications and platforms, the practical facts about how to provide the information. Thus it concerns with the technological infrastructure necessary to fulfill the requirements of the information strategy, and provides the framework within which the specialists offer information technology applications and users use them (Allen, 1995).

2.5 Benefits of developing IT strategy for the organization

Information Technology plays a significant role in moderating the relationship between organizational characteristics including structure, size, learning and culture. Information technologies encompass a broad array of communication media and devices which link information systems and people. IT promotes collaboration and information sharing both inside and across organizational boundaries. Huber's (1990) suggested that IT is a variable that can be used to enhance the quality and timeliness of organizational intelligence and decision making, thus promoting organizational performance.

Several studies have shown that effectiveness of IT investments lead to favorable results in terms of firms' performance directly or indirectly across various business fields such as the healthcare industry (Halamka, 2009), rubber industry (Huang, 2007), supply chain management (GonzálezBenito, 2007), and across various countries and transitional economies (Samoilenko,

2006). Research also indicates that firms with superior IT capability exhibit higher performance when compared to average industry performance.

Motjolopane and Brown (2004) recognized that achieving a strategic business and information technology alignment contributes immensely to ensuring that IT investments result in improved organizational performance. Lee, Chu and Tseng (2009) argued that strategic alignment between IT and business is required to use IT assets effectively to assist business management and practices and to functionally integrate with internal and external variables (Chebrolu & Ness, 2013).

IT investment as any acquisition of computer hardware, network facilities, or pre-developed software, or any in-house systems development project, that is expected to add to or enhance an organization's information systems capabilities and produce benefits beyond the short term. Most organizations in all sectors of industry, business and government, are fundamentally dependent on their information technologies and as information revolution is sweeping through economy of countries, no company can escape its effects. Similarly the aim of firms all over the world to make investment in information technologies is to increase the efficiency of both their internal processes and their transactions with their customers, suppliers and business partners (OCED, 2008).

IT helps a firm to differentiate itself not only through price but also through product innovation, shorter-time to market, and customer service, because using IT firm can easily collect customer data, which includes demographic data, product comments and potential demands for certain products/service. These data can provide a good foundation for the firm to customize existing products in innovative ways, which can help the firm differentiate its products and services from its competitors or concentrate on a niche market (Fruhling & Digman 2000).

The firms invest on IT mainly to enhance their competitive advantage through differentiation, cost reduction, innovation, growth, and alliance (Abdul Karim, 2014). But trend of investing looks like, is discussed in the next section.

2.6 The evolution of alignment concept

Drahansky, (2016) pointed in Conceptually, IT strategic alignment is viewed in the literature as a bridge that links information technology to different viewpoints on other domains of an organization and its environment (Avila, Goepp, & Kiefer, 2009). It is important that the requirements analysis capture both an organization's strategic business objectives and the activities and processes by which those objectives are to be achieved (Chebrolu & Ness, 2013).

In some cases, the companies need advanced technology to achieve the desired goals, exist broad technological preoccupation for companies in focusing their attention company on the research of the following areas: Innovative software, new type of computers, technology that creates new business value, creates interdisciplinary projects business value and social value and others(Alonso & Tovar, 2012).

Alignment ranked as the number two concern in the year if failed to reach the top spot, but the alignment between business needs and IT capabilities is still a prominent area of concern (Charoensuk et al, 2014).

Alignment terminologies: The concept of alignment was discussed with different terminologies, including alignment, fit, marriage, synchronization, linkage, integration, harmony, and bridge.

Origin of alignment: The key advantage is to simplify the overall business organizational goals and objectives and to professionally identify the role of information systems to better support the business organization to achieve its goals and objectives. The secondary advantage is that alignment of information systems allows business organizations to not only recover their business scope but their infrastructure as well, by harmonizing their relationship with their information system.

In addition, managing information system processes can improve the worth and productivity of the organizations performance. This synchronization between information system and business goes to boost over time as information technology starts impacting every stage of the business organization such as the project stage, strategy stage, planning stage, and so on. However, it has been realized that business organizations which were based on conventional business strategies failed to take full advantage of information systems, but instead, they used information systems only at the back end or considered it as disbursement rather than as a business organization value enabler.

Early approaches were ad hoc, given the level of displeasure in business organizations regarding their viewpoint on information system departments. These hypotheses have prolonged over time, and nowadays, academics point out many concerns and challenges and have developed dissimilar alignment approaches, techniques, and models.

Alignment definitions: The article shows that, alignment is the process of alignment between businesses and information systems involves two key questions: how does the information system align with the business environment? And how does the business organizational environment

align with the information system environment within the business organization? There are various definitions of business and information system alignment in existing literature, but the most prominent ones that have been selected for the purpose of this research are as shown in Table 2.1.

Table 2.1 Definitions of BITA from different scholars view

Originating author(s), year	**Definition**	**Comments**
Henderson and Venkatraman, 1993	Alignment is the "degree of fit and integration among business strategy, IT strategy, business infrastructure, and IT infrastructure"	This definition discusses all factors of alignment
Broadbent and Weill, 1993	Alignment between business and IS is the "degree to which it is allowed, supported, and motivated by information technology strategies"	Definition addresses alignment between businesses and IS strategies
Smith and McKeen, 2014	Strategic alignment of information systems exists "when an organization's goals and activities and the information systems that support them remain in harmony"	Strategic alignment in context of IS support in order to achieve organizational goals.
Campbell, 2005	Alignment is the process where "business and IT work together to reach a common business goal"	Definite recommends fit between business and IS sectors; however, organizational factors are not clear in the definition
Reich and Benbasat, 2000	Alignment is the "fit to which the mission, objectives, and plans contained in the business strategy are joint and supported by the IS strategy"	Strategic fit in context of IS support in order to attain organizational goals effectively
Silvius, 2009	Alignment is the "degree to which IS applications, IS infrastructure, business strategy, and processes are enabled and shaped"	This definition of alignment discusses the importance of IS applications in business strategy and infrastructure

Unpredictably, the alignment is often studied without a clear definition of the concept, assume, 80 alignment articles reviewed, more than one third (35%) do not define the idea of alignment at all. Less than half (43%) explicitly define or conceptualize the process of alignment. The left over articles (22%) submit to the work of other researchers in defining the alignment concept. This lack of definitional transparency represents a possible source of uncertainty, promoting diffusion rather than convergence of viewpoints and obstructing cumulative research evolution on alignment. Table 1 summarizes some of the most important definitions suggested for the alignment and shows which manuscripts have adopted these definitions.

2.6.1 Strategic alignment measurement criteria's

As Luftman, (2000) pointed in "Alignment's significance has been well known and well recognized since the late 1970's, over the years, it persisted among the top-ranked concerns of executive leaders. Alignment seems to rise in significance as organizations strive to bridge technology and business in light of dynamic business strategies and continuously evolving technologies". As Al-adwan(Al-adwan, 2014) pointed in " Alignment of information technology with organizations business strategy is a fundamental principle advocated for over a decade".

As Luftman pointed out, the six IT-business alignment criteria's described in the following section of this paper. The model has addressed a critical question in alignment research how organization can assess their alignment maturity and the model has six criteria's as follow:

Communication: This dimension is concentrates on the intensity and quality of knowledge and ideas sharing between business and IT. How the business and IT understand each other? How does communicate with external parties such as vendors, consultants' and business partners (Boasberg et al., 2019).

Competency / value measurement: Many IT organizations cannot demonstrate their value to the business in terms that the business understands (Luftman, 2000).

Governance: The allocation of IT resources is among the most important enablers of alignment. This decision-making authority needs to be clearly defined (Luftman, 2000).

Partnership: As Luftman, (2003) pointed in "Partnership is focused on the presence connection between business and information technology departments". Partnerships used to enable business strategy via information technology departments (Solomon, 2018). It includes defining information technologies role in business strategies, the degree of trust between the two entities, and how each perceives the other's contribution.

Scope and architecture: To what extent a technology is evolved to become more than just business support? This maturity dimension refers to the continuous process of provisioning a flexible infrastructure, its evaluation, and the application of emerging technologies and delivery of customized solutions to business units and external customers or partners.

Business and IT skill: It deals about how the staffs have the skill needed to be effective. As well as how professionals understand the organizational drivers and speak the language of the business. How well does the organization staff understand relevant technology concepts (Silvius, 2007). It also focuses on change readiness, learning capability and innovation.

2.7 Alignment between IT and business strategy

The construct of Business-IT Alignment was formulated based on the alignment framework proposed by Henderson & Venkatraman. Strategic business-IT alignment is an alignment at the strategic level, derived from an alignment between organizational strategies and information technology strategies (Charoensuk et al., 2014).

The strategic alignment maturity assessment provides organizations with a vehicle to evaluate these activities. Knowing the maturity of its strategic choices and alignment practices make it possible for an organization to see where it stands and how it can improve. Once the maturity is understood, the assessment method provides the organization with a roadmap that identifies opportunities for enhancing the harmonious relationship of business and information technology (Luftman & Luftman, 2000).

Business Strategy Alignment: Connect to the corporate business strategy. This ensures that the technology-related initiatives could meet the most important needs and priorities of the business. It helps define the longer-term strategic goals of the organization(Boyer, 2010).

For an IT and business strategies to be aligned it is necessary to clearly define business and IT objectives and review the formulation of these objectives. It is important for better alignment that IT professionals are involved during business planning and business professionals to be involved during IT planning. The alignment of IT with business strategy may need the organization to modify various features of the organizational business operations, structures and cultures (Issa-Salwe, Ahmed, Aloufi, & Kabir, 2010)

A convenient issue by way of aligning IT to business strategy is caused by the increasing dynamics in markets. Organizations are continuously adapting to changes in their environment. A

policy is not an ever attainable destiny. It gives a direction, not fate. The execution of business strategies in processes, structures, organization, resources, etc. is therefore also a continuous process. Several authors have showed that alignment is also a process, rather than a 'state' (Silvius, 2008).

2.8 Strategic alignment and organizational performance

It is important to select a comprehensive and multidimensional performance measure when measuring strategic alignment and organizational performance of public organizations. The challenge is to identify the appropriate elements and relationships describing strategic alignment within an organization in relation to business and IT strategies, and accordingly to identify those factors impacting the use of models, such as SAM; hence, there is the need to investigate the implications of organizational performance on public organizations as a result (Mohamed & Khalifa, 2016).

The SAM outlines four dimensions of strategic choice for management: business strategy, IT strategy, organizational infrastructure and IT infrastructure and process. Based on the strategic choices, Henderson and Venkatraman (1993) conceptualized two types of alignment: strategic fit and functional integration. The strategic fit refers to the alignment between the external domain (business and IT strategies) and the internal domain (business and IT infrastructure). The functional integration on the other hand, is the alignment between business strategy and information technology strategy and between business infrastructure and information technology infrastructure. The increasingly strategic importance of information technology in organizations, most studies focused on the alignment of information technology strategy with business strategy and investigated the performance effects of the strategic alignment. The alignment between organization's success factors and their information technology capabilities, and reported a positive effect of the alignment on organizational performance (Yayla & Hu, 2011).

The crucial goal of private organizations is to maximize profit and hence performance could be measured from one dimension, looking for the net profit earned in the last financial year. But, the public sector, unlike the private sector, is largely bureaucratic with many stakeholders pursuing their group or individual goals and objectives. Hence performance measurement in public sector must be seen from multiple perspectives to meet the various demands and needs of the stakeholders. The performance prism is suitable framework for measuring performance in public organization because of its multidimensional view on measuring organization performance (Mohamed & Khalifa, 2016). Performance of the organization defined by the extent to which

choices consist of business and information technology strategies are consistent, and as business strategies change, organizational process are required to keep pace. Similarly, for the information technology strategies are require to be consistent (Shamekh, 2008a). As Henderson and Venkatraman, (1993) pointes in "Using information technology resources properly to enhance the opportunities for strategic advantage of the organizations". Although the association between information technology and business strategic alignment and organizational performance seems to have been well established in the literature, its validity in the context of developing countries is unclear and has not been studied earlier. Due to economic, social, and technological reasons, the level of information technology tradition for strategic purposes could be quite different in developing countries as compared to developed countries. The main roadblocks include limited funding, volatile political situation, and lack of national policies and standards (Yayla & Hu, 2011).

According to (Mohamed & Khalifa, 2016) pointed out 'Strategic alignment refers to two fundamental and generic objectives in relation to organizational performance: to be effective by doing the right things; and to be efficient by doing things right'

Strategic alignment affects organizational performance in various ways such as it results in higher returns on IT investment, increased profitability, sustain strategic performance and adding a competitive advantage to organizations (Luftman, 2011).

The level of performance of public organizations is a major factor in building trust between office-holders and stakeholders, performance evaluation in the public sector may have to be adjusted in such a way so as to reflect the quality of the services provided and the level of client satisfactions towards it (Mohamed & Khalifa, 2016).

2.9 Strategic Alignment Model (SAM)

The Strategic Alignment Model (SAM) can be defined as a business-IT management framework to enable successful implementation of business and Information Technology strategy components [Henderson and Venkatraman, 1991 & 1993; Luftman et al. 1993]. The SAM model represents the dynamic alignment between the business strategic context and the IT strategic context. Drahansky, (2016) pointed out "Henderson and Venkatramans' model called the strategic alignment model (SAM) is the most widely accepted in the field of business/IS alignment. The model is based on four different strategic domains namely: strategy, organizational infrastructure, and process, information systems strategy and IS infrastructure and process. . Each domain has its own underlying dimensions that consist of three components as

presented in Figure 2.1. And this model received support from the business industry and practitioners".

Reich and Benbasat had conducted work on cultural and social issues of organizations, and they proposed an approach to measure the relationship between business and information system. The four different factors of social dimensions were considered, and these are shared knowledge between business and technology executives, the success of technology within the business, communication, and the connection between the business and technology planning process. This research support/ accept and contextualize the model of Hunderson and Vankatraman, to serve different groups or individuals within the organization.

As you can see the universally accepted strategic alignment model which done my Henderson and venkatraman's, this model is still used by different researchers. Look the model below:

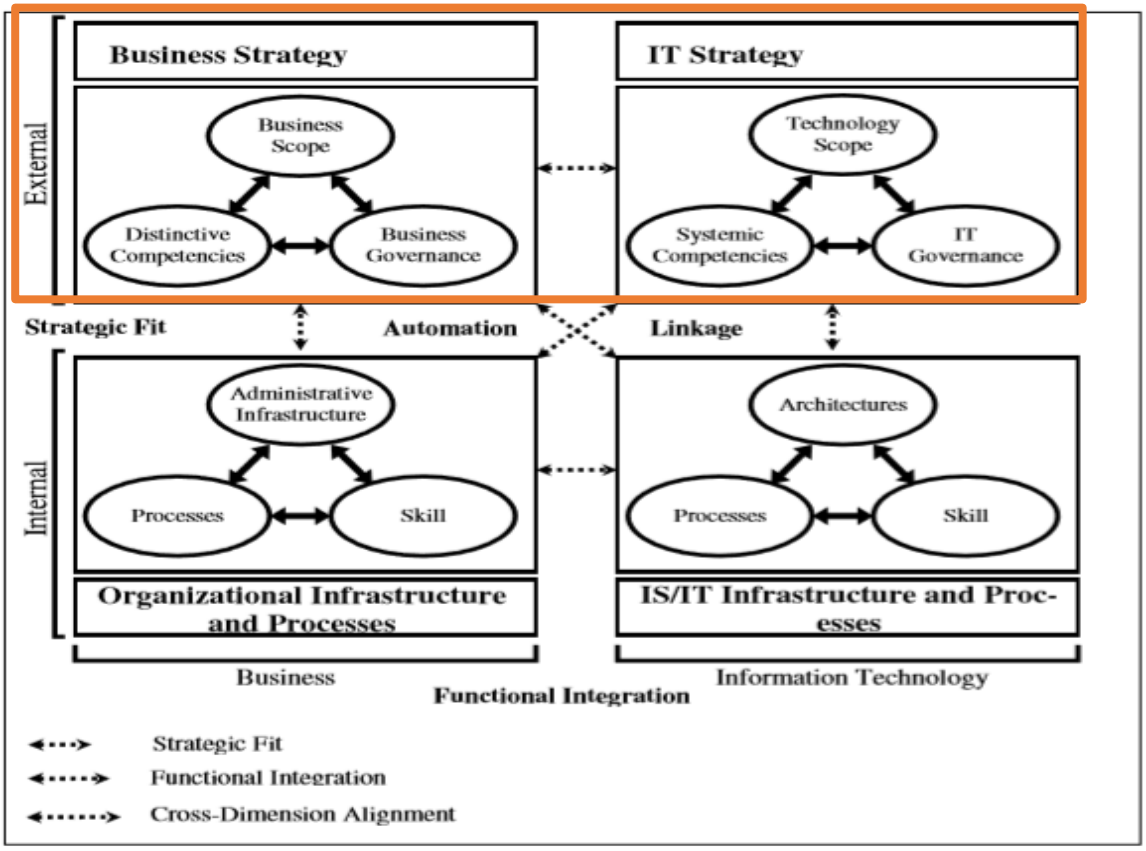

Figure 2.1 Strategic Alignment Model (adopted from Henderson & Venkatraman, 1993)

The components of the strategic alignment model are twelve components that further define business-IT strategic alignment (Luftman, 1993; Luftman, 2000). These components as outlined by Luftman (2000) in his article are as follows:

A. Business Strategy

Business scope: Includes the markets, products, services, groups of customers/clients, and locations where an enterprise competes as well as the competitors and potential competitors that affect the business environment.

Distinctive competencies: The critical success factors and core competencies that provide a firm with a potential competitive edge. This includes brand (type of product made by a particular firm), research, manufacturing and product development, cost and pricing structure, and sales and distribution channels.

Business governance: How companies set the relationship between management, stockholders or shareholders, and the board of directors. It also includes how the company is affected by government regulations, and how the organization manages its relationships and alliances with strategic partners.

B. Organizational infrastructure and processes:

Administrative structure: The way the firm organizes its businesses. Examples include central, de-central, matrix, horizontal, vertical, geographic, federal, and functional.

Process: Refers to how the organization's business activities (the work performed by employees) operate or flow. Major issues include value added activities and process improvement.

Skills: Refers to human resource considerations such as how to hire/fire, motivate, train and educate. As Lufruman, (2003) revealed that skills define the information technology human resource consideration in order to hire and cancel jobs.

C. IT Strategy

Technology scope: The important information applications and technologies.

Systemic competencies: Those capabilities (e.g. access to information that is important to the creation/achievement of a company's strategies) that distinguish the IT services.

IT governance: How the authority for resources, risk, conflict resolution, and responsibility for IT is shared among business partners, IT management, and service providers. Project selection and prioritization issues are included here.

D. Information technology infrastructure and process

Architecture: The technology priorities, policies and choices that allow applications, software, network, hardware and data management to be integrated into a cohesive platform.

Process: Those practices and activities carried out to develop and maintain applications

Skills: Information technology human-resource considerations such as how to hire/fire, motivate, train and educate the individuals.

The strategic alignment model can be used to assess the range of strategic choices facing managers and explores how they interrelate (Ward and Peppard, 2002). The power of this model was presented in terms of two fundamental characteristics of strategic management: strategic fit (the interrelationships between external and internal components) and functional integration (integration between business and functional domains) (Henderson and Venkatraman, 1991 & 1993) (Shamekh, 2008a).

This study mainly focus on functional integration of business strategy and IT strategy (external) from the model (SAM model). The external strategy elements are helps us to measure the occurrence or the status of business and IT strategies in the organization. And the functional integrations also helps as to know the status of strategic alignment between business and IT strategies.

2.10 Research gap

The business-IT alignment has been studied by various researchers especially by information systems scholars, studies based on different perspectives, models and criteria's. Table 2.2: The aim, methods, models and findings of business and information technology strategic alignment (BITA) study from literature

Table 2.2 Related works regarding to BITA

Year	Title and Authors	Goals/aim	Methods	Model	Findings & limitation
2008	Business-IT Strategic Alignment Concept in Theory and Practice By Fadeel R. Shamekh	To address and understand the concept and theory of business-IT strategic alignment	Qualitative research method with empirical study	Strategic Alignment Model [Henderson and Venkatraman 1993]	• Determined alignment gap factors • Biased to elaborate and data collection
2014	Information technology and business strategy alignment, and its impact on the performance of commercial banks in Ethiopia By Girma amare	To identify the impact of IT and business strategy alignment on the performance of commercial banks in Ethiopia	Quantitative method	Henderson and Venkatraman 1993	• Banks in Ethiopia has invest more without aligning IT with their business strategy
2019	Business-it strategic alignment improvement framework: a case study on bank of abyssinia By Menelik Belete	To explore Business and IT strategy alignment challenges and propose a framework to improve BITA in the context of BOA	Qualitative research approach, with exploratory case study	Strategic Alignment Model (Henderson & Venkatraman, 1993)	• Alignment in practice is vary from documents • BITA has impacted with various influential factors • The study doesn't include internal strategy and business performance
2018	Bridging the gap between business strategy and it strategy: exploring strategic alignment gap	To investigate and bridge the gap between business strategy and IT strategy	Qualitative research methodology, case study approch	Reprinted from Henderson & Venkatramen, 1989	• Define the success factors of BITA • The model is tested only in finance sector

	By King Solomon				
2 0 1 6	Business and Information System Alignment Theories Built on e-Government Service Practice By: Sulaiman and Festus	To study the process of alignment between business and information systems holistically	Literature review	Theoretical framework of alignment between e-Government and organizational performance	Organizations pay special attention to the alignment issue in order to maximize the impact of the limited IT resources on their business performance.
2 0 1 6	Alignment of internal and external business and innovation domains By: katz, preez & Louw	To define and connect the different components, tools, and methods required to align internal and external innovation domains and a company's overall business strategy and structure	Case study	SAM with all components and relationships	SAM supports alignment in a company by identifying the drivers of change, but there are other factors that influence the fit. E.g. Changes, culture

Most of the previous research used qualitative methodology which is a reductionist research that fail to fully understand the complex phenomenon of business and IT alignment. However, future work is needed in terms of looking at the qualitative elements, perhaps through some interviews (Mohamed & Khalifa, 2016). The quantitative method is not without its drawbacks. Future research needs to be conducted in a larger scale with more participants from a different context. It would also be interesting to see how far the result is affected by incorporating a qualitative case study or mixed method research in the similar context.

According to (Mohamed & Khalifa, 2016) pointed out, future work could investigate developing generic model including other factors –especially external factors.

CHAPTER THREE

REASEARCH METHEDOLOGY

3.1 Introduction

This chapter explains the research design and its appropriateness has been presented. And also discuss a review and critique of the methodology which are used in the study, the hypothesis which correspond with the study model and describes the data analysis plan. This chapter is a key or plays an important role in order to show or to say the study follows the scientific process or not. In the final section of this chapter, the study describes the threats to validity externally and internally along with construct validity and ethical procedures.

3.2 Research design

This research employed mixed modal approach (qualitative and quantitative) research method to collect, analyze and synthesize the researching data. As Anjou, (2016) pointed out "the quantitative studies as a relationship-based, qualitative studies as phenomena-based and mixed-method studies as covering both aspects". The implemented approaches: first (1), a quantitative research approach to measure the relationship between the ERCA information technology and business strategic alignment maturity level, to test the hypothesis and to know the scale of BITA's impact on the organizational performance. For data collection, questionnaire was the main instrument for data collection process. Also written documents or reports which are written by the organization previously or written by external bodies for research or other purposes (secondary sources).

Second (2), the purpose of qualitative method for this study is to deeply understanding the existing phenomenon regarding to BITA , as well as to identifying the relationship between business needs (business strategy) and IT enablers (IT strategy) and its impact on individual aspects of organizational performance, which can be measured and published. For data collection: observation and interview (telephone, focus group or one-on-one interview from ERCA information system management (ISM) directorate directors and team leaders) was the main actors during data collection.

To measure the average maturity level of BITA using the SAM instrument which provided the six maturity components for strategic alignment. These maturity components are communications, competency/value measurements, governance, partnership, technology scope, and skills. And also

the two strategy domains (business strategy and IT strategy) and the organizational performance measured on the same process. The SAMM assessment question contained Luftman's 29 questions from his IT/business strategic alignment maturity and business performance model. This study categorized these into six different criteria using a 5-point Likert scale on all of them with 1 = Level 1 – least, 2 = Level 2 – less, 3 = Level 3 – Medium, 4 = Level 4 – more, and 5 = Level 5 – most. As (Luftman, Lyytinen, & Zvi, 2017) pointed out a 5-point Likert scale allowed to assess the significance of information technology and business strategic alignment.

3.2 Research model

In the previous chapter we see the general background of business-IT alignment and theoretical model that represents the components of information system, relationship between business and IT strategies and the gap of BITA. This chapter discuss the adopted research model of the thesis, which presents the theoretical basis to answer the research questions and it identifies the different components of the proposed research model that constitute the business strategy and IT strategy.

In order to achieve the objective of this thesis, the focus is on the external components of SAM which are business strategy and IT strategy as well as strategic alignment and organizational performance as defined in the model bellow is to explore the interrelationship between business and information technology strategies that consists of the extended business domain and information technology domain.

The research model in this study shown in Figure 3.1 identifies the relationship of the external components of the SAM model that involves achieving strategic alignment between business strategy and IT strategy. The strategic alignment in this model refers to the strategic harmony that can translate the deployment of IT into an actual increase in business performance. The main concerns this study was present the research design and deals with how organizations can manage successfully the strategic alignment between business strategy and information systems strategy.

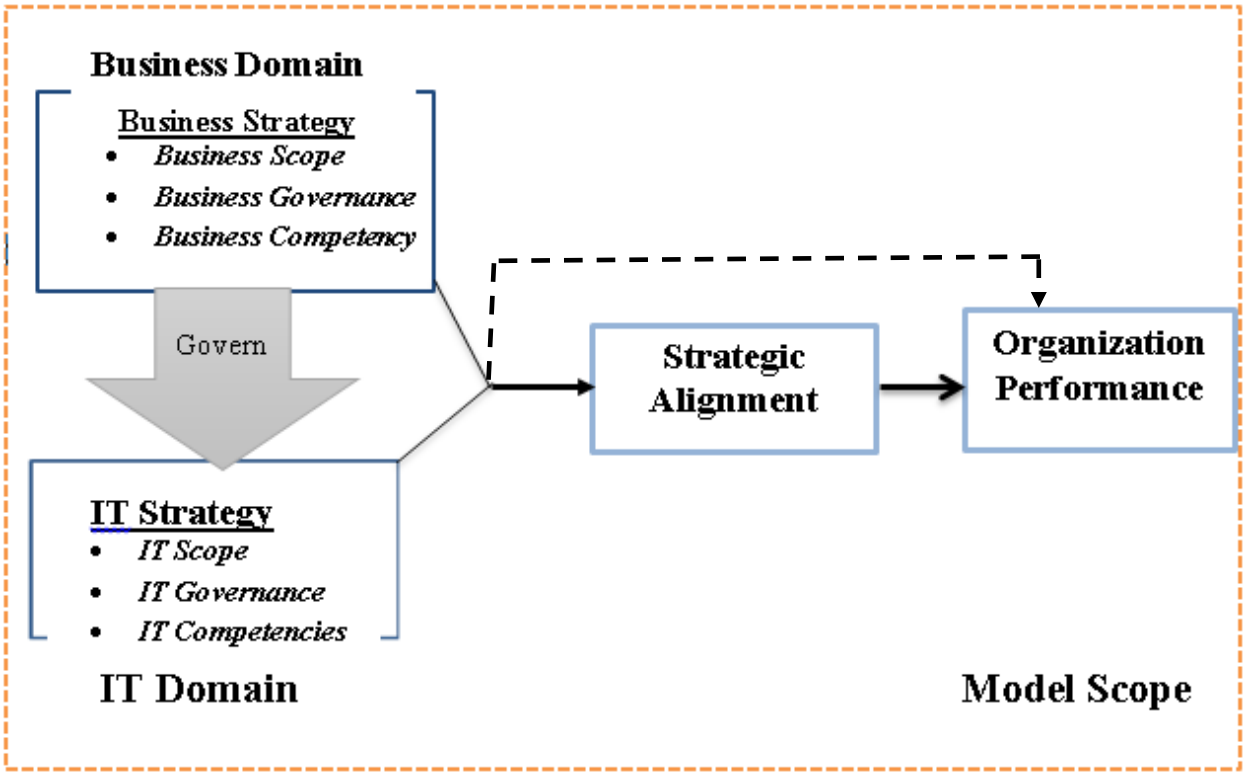

Figure 3.1 Conceptual research model, Source: extended from business and IT domain

3.2.1 Business Strategy and organizational performance

The business strategy refers to a detailed plan of an organization for achieving success in business. Organizations compete and concerned with decisions such as product-market offering and the distinctive strategy attributes that differentiate the organization from its competitors, as well as the range of "make-versus-buy" decisions, including partnerships and alliance (Shamekh, 2008a). The components of business strategy includes business scope, business competencies, and business governance (Henderson & Venkatraman, 1993).

If the organization's key focus is to ensure successful implementation and realization of business strategy, then this confirms a business-centric approach of the organization and requires addressing the key question: "how can information technology be used to achieve business strategy?" This requires that the IT strategy should support the business strategy to achieve business/IT alignment (Haes, Grembergen, Joshi, Huygh, & Alignment, 2020).

Business scope: Business scope refers to the organization's business and everything that might affect the business activities and progress (Shamekh, 2008a). It includes the products, services, groups of customers/clients, and the locations where an enterprise competes as well as the business buyers, competitors, suppliers, and potential competitors that affect the business environment (Henderson & Venkatraman, 1993, Luftman, 2000).

Business competencies: Business competencies refer to all attributes of business strategy that contribute to a distinctive, comparative advantage to an organization over its competitors (Shamekh, 2008a). These attributes include cost and pricing structure, product or service quality, value added service, research, manufacturing and product development, and superior sales and distribution channels used by business (Henderson & Venkatraman, 1993, Luftman, 2000).

Business governance: Business governance or corporate governance is a wide framework of systems and rules used to run and control the business process in a firm. It is the process by which corporations are properly managed, directed and controlled including the internal and external business regulations and monitoring mechanisms towards enhancing business performance and achieving long term business values (Shamekh, 2008a). Business governance also refers to the external business relationship that exists between management, the board of directors, and stockholders of the company. It involves make-versus-buy choices in business strategy. Such choices cover a complex array of inter-organization relationship such as strategic alliances, joint ventures, marketing exchange, and technology licensing (Henderson & Venkatraman, 1993, Luftman, 2000).

Here, business strategy is recognized as the initial dependent variable and the relationship is examined by linking the occurrence of business strategy with strategic alignment. The business strategy is measured by four indicators namely: business drives change, business scope, business competency and business governance. The operational definition of each indicator is given in the following table (see table 3.1).

Table 3.1 Business strategy measure based on SAM

Business strategy sub-variables	**Measures**
Business Drives Change	• The Business strategy lead the overall changes in the organization • The organization motivates IT department to developing an IT strategy
Business scope	• The organization's business strategies affect every business activities and progress (e.g. service, product, customers...) • The organization works on quality product and service delivery throughout the country
Business competency	• Business strategy plays as comparative advantage over its competitors(E.g. cost structure, service quality, research, product development, multimedia and channels, …) • The organization strategy navigates and analyses the past experiences to predict the future. e.g. organizational SWOT and PESTLE analysis
Business governance	• The organization has a wide framework used to run and control the business process. E.g. plan for business regulations and monitoring mechanisms to achieving long term business values • The organization has external business relationship via executive board of directors. E.g. strategic alliances, joint ventures, and technology licensing

Based on the above arguments regarding to the occurrence of business strategy in public organization, the following is hypothesized:

H1: Business strategy positively affects organizational performance

3.2.2 IT strategy and organizational performance

IT strategy consists of an IS component and an IT component, where IS defines the organization's requirements for information systems to support the overall strategy of the business (Shamekh, 2008a). It is firmly grounded in the business, taking into consideration both the competitive impact and alignment requirements of information technology. The IT strategy is concerned with outlining the vision of how the organization's demand for information and systems can be supported by technology, where essentially, it is concerned with IT supply (Luftman, 2000). The information systems strategy in this research model refers to how the firm is positioned in the information technology marketplace. The components that form information technology strategy consist of technology scope, IT competencies, and IT governance (Henderson & Venkatraman, 1993).

IT scope: IT scope refers to those specific information applications and technologies (for example, electronic imaging, local- and wide-area networks, expert systems, and robotics) that support current business strategy initiatives or could shape or create new business strategy opportunities for the organization(Henderson & Venkatraman, 1993, Luftman, 2000, Shamekh, 2008b).

IT competencies: Refer to the characteristics of information technology (such as system reliability, cost performance levels, interconnectivity, flexibility) that could contribute positively to create new business strategies or better support of existing business strategy (Henderson & Venkatraman, 1993, Luftman, 2000, Shamekh, 2008b).

IT governance: IT governance is a subunit of business or corporate governance that deals with IT functions in the firm. It involves a number of IT management activities for the board and executive management, such as assigning IT roles and responsibilities, defining constraints within which IT operates, measuring performance, and managing risk and obtaining assurance (Shamekh, 2008a). IT governance refers to the external relationships (such as, outsourcing alliances, joint research and development for new IT capabilities) that the organization depends upon. It describes how the authority for resources, risk conflict resolution, and responsibilities for IT is shared among business partners, IT management, and service providers. Business project selection and prioritization issues are a part included in this component (Henderson & Venkatraman, 1993, Luftman, 2000, Shamekh, 2008b). Another approach to IT governance is presented through several IT governance frameworks that have been suggested (such as CoBIT

and ITIL) to help IT managers structure and formalize the IT management process to the firm for a holistic management of IT governance processes (Haes, 2014), (Guldentops, 2004)

The purpose of measuring information technology strategy maturity for strategic alignment, which is the second construct for this study. In light of the definitions and model in previous chapter, the process of interrelating the components of business and information technology relationship is highlighted. Measuring the degree to which these process if where in place and well-functioning the occurrence of information technology strategy in the organization. This study examines the effect of information technology strategy on strategic alignment based on the four business strategy sub-variable namely: IT enables business, IT scope, IT competency and IT governance (see Table 3.2 below).

Table 3.2 IT strategy sub-variables and measurement item

IT strategy sub-variables	**Measures**
IT enables the business	• The organization has formed IT department as a part of working unit (like as: finance, HR and other department) • IT department developing IT strategies to support the goal of the organization
IT scope	• The organization has using an IT applications such as:- audio, video, text processing and database • The organization has using technologies such as: networks (intranet, internet) and robotics for a new business opportunities
IT competencies	• IT strategy highly supports the business strategy. E.g. to improve product quality and attract more customers • The organization has using enterprise wide systems such as:- SAP, ERP, CSM, etc.
IT governance	• The organization has proceed doing the external relationships (such as, outsourcing alliances, joint research and development) • The IT directorate has using a frameworks like: - COBIT and ITIL for a holistic management of IT governance processes in the organization.

Based on the above discussion regarding to the occurrence of information technology strategy and organizational performance, the following is hypothesized.

H2: Information technology strategy has a positive effect organizations performance

3.2.3 Strategic alignment (SA) and organizational performance

Strategic alignment refers to the state of congruence between business strategy and IT strategy in the firm to support the overall business purpose that influences the firm's business performance (Henderson & Venkatraman, 1993, Luftman, 2000, Shamekh, 2008b).When researchers are manipulating an environmental condition to determine its effect on behavior, they use special terms that help describe these activities. A variable is any condition that can vary or change in quantity or quality, a qualitative variable is one that differs in kind rather than in amount (Lammers & Babbie, 2005)

The following variables are universally accepted variables or criteria's that used to measure the maturity levels of strategic alignment. Researchers such as: (J. Luftman & Luftman, 2000), (Solomon, 2018), (Jonathan, 2018), (Boasberg et al., 2019) and others were used the following six criteria/ variables:-

According to Shamekh (2008b), "*Based on literature, the impact of strategic alignment between business strategy and IT strategy should have a constructive impact on the business performance of the firm, which is defined as the measures of growth and profitability of the firm through its business endeavors and deployment of organizational and technological resources*". It has been argued that increasing operational effectiveness of IT in business through the right use of IT as a service and business-driven exploitation impacts the business performance of the firm (Henderson & Venkatraman, 1993). Shamekh, (2008b) pointed in *"organizational or business performance is an important task in strategic alignment and has been identified and discussed by different scholars that showed its strong connection with the business-IT strategic alignment*".

One of the main goals is to measure the impact of strategic alignment maturity on the organizational performance, which is the fourth construct in this research. In the insight of the definition and conceptual model above, the process interrelating business and information technology relationship is incorporated. Measuring the extent of strategic alignment involves a shared vision, goals and plans. This section examines the common attitude that alignment is related to organizational performance. According to the earlier studies subjected that alignment leads to strategic use of information technology, which consequently enhance the organizational performance.

Here, organizational performance is considered as the last dependent variable. This relationship is surveyed by linking strategic alignment to organizational performance through the application of multiple performance measure to capture the overall performance. As Luftuman, (2000) pointed

in “The components of strategic alignment between business and information technology; namely: communication, competency, governance, scope and architecture and skills are expected to contribute for the organizational performance”. A multi performance measures based on three sub-variables (adopted from Khalifa, 2016) has shown in the table below.

Table 3.3 Organizational performance measures

Performance sub-variables	**Measures**
Stockholder satisfaction	• Delivery of services meet customers’ needs • New Services Development • . Improve the outcomes/ outputs
Process	• Increase responsiveness to clients requirements • Enhancement in business processes • Attain timely decision making • Increase in the cooperation between departments
Capabilities	• Increase in innovation capabilities • Development of effective training programs • Increase the organizational capacity • Performance evaluation (your organization evaluate an activities based on the plan and by using the technique like balanced score card (BSC))

Therefore, based on the above argument the following suggestion is hypothesized.

H3: strategic alignment have a positive impact on organizational performance

3.3 Data collection Methodology

To address how organization can manage the strategic alignment between business strategy and IT strategy, this study employed the mixed modal approaches, empirical data analysis on the selected organization (ERCA). Interview and questionnaire was the main method for collecting relevant qualitative and quantitative data respectively. From ERCA. A qualitative research involves the use of qualitative data through using questionnaire and interviews as methods of data collection (Shamekh, 2008b). Concerning the data collection method, the survey contains semi-structure interview, various documents, observations, and self-administration.

The interview was conducted in English language. Among of the qualitative methods are listed as follow:

Interview: Open-ended questions was yield in-depth responses about people's experiences, perceptions, opinions, feelings and knowledge. Data consist of verbatim quotations with sufficient context to be interpretable.

Observations: Fieldwork descriptions of activities, behaviors, actions, conversations, interpersonal interactions, organizational or community processes, or any other aspect of observable human experience. Data consist of field notes rich detailed descriptions, including the context within the observations were made.

The quantitative data collection process at the time of survey was conducted with respondents through the following instruments:

Questionnaire: One of the key instrument used to collect reliable data from respondents. The questionnaire can be distributed to respondents and collected from population in different way like: manually with printed paper and online through online templates (e.g. google form). In this study manual the questionnaire is distributed and collected manually.

Documents: Written materials and other documents from organizational, clinical, or program records, memoranda and correspondence, official publication and reports; personal diaries, letters, artistic works, photographs, and memorabilia, and written responses to open-ended surveys. Data consist of excerpts from documents captured in a way that records and preserves context.

3.4 The Study Population and Sampling Method

All the items under consideration in any field of inquiry constitute a 'universe' or 'population'. A complete enumeration of all the items in the population is known as census inquiry. The researcher must decide sample size which is representative of the parent population. In other words, a sample design is a definite plan determined before any data are actually collected for obtaining a sample from a given population. Samples can be either probability sample or non-probability sample. With probability samples each element has a known probability of being included in the sample but the non-probability samples do not allow the researcher to determine this probability. Probability samples are those based on: simple random sampling, systematic sampling, stratified sampling, cluster / area sampling whereas non-probability samples are those based on: convenience sampling, purposive sampling, judgement sampling and quota sampling techniques (*Kothari, 2004*).

On the other hand, under non-probability sampling the organizers of the inquiry purposively choose the particular unit of the universe for constituting a sample on the basis that the small mass they select out of a huge one should be typical or representative of the whole. From population considered by the researcher purposive sampling has been used.

This study follows purposive sampling method because this study (focus area) consists of management boards (both CEO and CIO), office's (branches or head office), departments (like IT, HR, finance department), different directives (like accountability, responsibility), mission/vision, and social environment (e.g. customer satisfaction or frustration). The targeted population for this study is ERCA head office, management information system (IMS) departments and one large taxpayer's office (LTO) branch offices. The respondents for this study were top managements like CIO or CEO for interview and every staff members of MIS department and Debrezeyt road large taxpayer's officers for questionnaire.

3.5 Data analysis tools and technique

The qualitative data which collected via interview (telephone and face to face) was recorded in audio and transcribed well. Whereas, the empirical data collected from respondents is synthesized with statistical analysis tool. Analyzing the survey dataset using SPSS helped organize, simplify, and analyze data and plan for analyzing the survey dataset is to use descriptive and inferential statistical analysis (Anjou, LAnjou (2016). The statistical analysis is conducted using SPSS version 26 to perform the analysis. The sample within this study is described using descriptive statistics. Summary statistics represented the mean and frequency of distribution. Analyzing data is conducted using multiple regression (multiple variables) analysis with moderator.

The maximum statistics data is found by SPSS; this data can be considered an indicator to the responses, as well as how it has ranged adequately on the multiple-item 5 Likert scales that were used (Mohamed & Khalifa, 2016). The research question organizing this study is: Is there business and IT strategies in ERCA? This research question provides the following hypotheses. H1: Business strategy positively affects strategic alignment. H2: IT strategy positively affects strategic alignment. H3: SA positively impacts organizational performance.

Then the hypotheses were tested using regression analysis, which is widely adopted in such research and regression analysis assumes that one variable is dependent on another single variable or multiple variables (Mohamed & Khalifa, 2016). The researcher used multiple regression with moderator, which shows the relationship between categorized variables that is dependent on another categorized independent variable.

3.6 Instrument validity and reliability

To apply the output knowledge of the research in real environment validity and reliability of data during research is essential (Mohamed & Khalifa, 2016). Researches are concerned with producing valid and reliable knowledge. A sound measurement must meet the tests of validity, reliability and practicality. In fact, these are the three major considerations one should use in evaluating a measurement tool. “Validity refers to the extent to which a test measures what we actually wish to measure. Reliability has to do with the accuracy and precision of a measurement procedure (Kothari, 2004). In order to promote the validity and reliability of the research, the following strategies are performed.

- Interview, observations, questionnaire survey and document analysis has done as data collection techniques. This helps to the researcher to apply triangulation and in addition to this data were collected from various demographic levels (Directors, managers, senior officers) from both domain (business and information system staffs). The research questionnaires were tested and the alpha value is greater than 0.7.
- Before the interview, the respondents were communicated and brief descriptions has been given about the research objective and also shared the interview questions. This was helped the researcher to create or good relationship and insight of common understanding before appointment for interview.
- The questionnaire was distributed for respondents by the involvement of directorate secretaries and the average time for filing the paper was two days. This helps for respondents, put their response when they get free time, even they can take the paper in their house fulfil their answer.

3.6.1 Construct validity

According to (Mohamed & Khalifa, 2016) pointed out, construct validity is characteristics such as motivation, creativity, racial bias, bedside manner, and the such that are taken into consideration when using an instrument to conduct a survey. There are 52 questions asked of participants and all of these questions in some way measure the constructs in question. Participants could have had varying educational levels, position, ages, and gender differences, which limit the threat of construct validity.

3.6.2 Ethical consideration

The letter that was taken from school of information science helps the researcher to establish a legal communication and relationship with responsive stakeholders of ERCA. The purpose of the survey study has been disclosed to the interviewees before the interview and asked their willingness to participate in this academic study. And during the interview they have been asked their permission to record the interview. In order to assure the confidentiality, the interviewee names and details were not disclosed. The questionnaire was distributed based on the willingness of the respondents. The ethical research was consistent with APA standards and Walden University ethical standards as it relates to the use of a survey, confidentiality, consent, and organization involvement (Anjou, LAnjou, 2016).

CHAPTER FOUR

ANALYSIS, DISCUSION AND FINDINGS

4.1. Data analysis

The findings from the quantitative data analysis are presented within this chapter and the quantitative or qualitative investigations involved collecting primary data from the ERCA by using survey, as discussed in the previous chapter. Section 4.2 of this chapter presents the results. Section 4.3 presents the descriptive analysis and quantitative analysis is presented in Section 4.4. The purpose of this study was performed an assessment using the SAM instrument to determine if there is a relationship between the ERCAs IT/business strategic alignment status and its influence on organizational performance.

The research hypothesis, regression analysis, validity test and SEM model are tested in this section. The adopted measuring instruments for this study contains 133 items, all of the measurements are categorized in to four groups which are: business strategy, IT strategy, strategic alignment and organizational performance. This test assists the researchers using the most suitable tests in an effort to gather better predictions and dimensionality assessment (Mohamed & Khalifa, 2016).

A survey was distributed in two branches of ERCA, the respondents were business staffs, IT staffs and both who are working on business and information technology working units. Hence there were some missing values from respondents' incomplete result from questionnaire.

4.1.1. Reliability test

Cronbach's alpha is a statistical measure used to test repeatability of data collection instruments. In other words, Cronbach's alpha value depicts the internal consistency of variables incorporated in the model. The higher the value of Cronbach's alpha, the greater the relationship between the variables. A threshold for data reliability acceptance in this regard is .70 (Mohamed & Khalifa, 2016).If the value of Cronbach's alpha retrieved from analysis of the data is higher than .70 then the reliability of the data is acceptable. In order to test the reliability of the data, transformed variables were incorporated within the reliability analysis.

The variables incorporated in the reliability analysis are business unit and organizational strategies (vision, missions) representing demographic characteristics; business drive changes,

business scope, business competencies and business governance representing business strategy; IT strategy support the business, IT scope, IT competencies and IT governance representing IT strategy; communications, competency, governance, partnership, scope and architecture and skills representing strategic alignment; stakeholder satisfaction, processes and capabilities representing organizational performance.

After performing the reliability analysis on the data, we found Cronbach's alpha value of 0.931 (Table 4.1). The value extracted from the analysis of the data is much higher than 0.70. Therefore, it can be interpreted that the data is highly reliable and the variables incorporated in the model are closely related.

Table 4.1 Reliability Statistics of independ3nt variables from Alpha value

Reliability Statistics

Cronbach's Alpha	N of Items
.883	35

4.2 Sample and data collection

The data sample of this thesis was drawn from the ERCA Management Information System center and LTO office. The respondents of the survey were IT and business professionals for both qualitative and quantitative data.

Interview data: The interviewees list and the structured/unstructured time duration from the MIS department professionals of ERCA. The transcription of interview data is attached at the end of this document (in Appendix A).

Table 4.2 Number of respondents for interview

Position	**Number of professionals**	**Structured**	**Unstructured**
IT director	1	23:3 minutes	15:00 Minutes
CEO	2	5:4 minutes	6:00 minutes
Tax admin team leader	3	8:7 minutes	2:00 minutes

Source: Own survey data

4.3 Descriptive Analysis

Different responses gathered from the study sample were analyzed descriptively. The analysis shows the frequency of responses from the study sample in an effort to reveal the inclination of responses with regard to the different study variables. The variables incorporated by this study include business strategy, IT strategy, Strategic alignment and organizational performance.

Communications, competency, governance, partnership, scope and architecture, and skills cumulatively represent 'strategic alignment', where the level of alignment was measured using a 5 point Likert scale. Perceived usefulness and perceived ease of use represent IT acceptance where the level of acceptance was measured using similar scaling point. Business strategy was evaluated with the posing of a series of questions to respondents. In addition, organizational performance was measured on the basis of stakeholder satisfaction, processes and capabilities.

This study aims to examine the occurrence of strategies in ERCA, alignment between business-IT strategies and influence on organizational performance. The two strategic domains affecting this alignment which are business strategy and IT strategy. The selection of respondents in this study was both IT and business professionals who are working on LTO and MIS office. Table 4.3 presents the sample, the first section represents employees' knowhow about strategy. It was observed that majority of the respondents (from 133) qualifying to be the part of the survey represented professionals (IT staff 42.1%, business staff 48.9% and both 7.5%) did not knows about both business and IT strategies of the company is 15.0%, knows both IT and business strategy is 35.3%, knows IT strategy 9.0% and know business strategy 35.3%.Whilein section three of the table, 95.5% of respondents know the mission and vision of the organization.

Table 4.3 Demographic characteristics of respondents

Organization unit

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	IT	56	42.1	42.7	42.7
	Management/ core business/ planning	65	48.9	49.6	92.4
	Both	10	7.5	7.6	100.0
	Total	131	98.5	100.0	
Missing	System	2	1.5		
Total		133	100.0		

Educational level

Valid	Bachler Degree	114	85.7	85.7	85.7
	Masters	19	14.3	14.3	100.0
	Total	133	100.0	100.0	

Experience

Valid	less than 3 years	13	9.8	10.2	10.2
	3 to 5 years	59	44.4	46.5	56.7
	5 to 10 years	44	33.1	34.6	91.3
	more than 10 years	11	8.3	8.7	100.0
	Total	127	95.5	100.0	
Missing	System	6	4.5		
Total		133	100.0		

4.3.1 Demographic Characteristics

The demographic characteristics of the study was explored through information about business and IT strategies from both business and IT staff members of ERCA. The respondents in the questionnaires were asked about the business unit (department) to which they belong. And as per the descriptive analysis, 48.9% of the study sample belongs to management/core business /planning (Table 4.4). In additions, the questionnaire was asked about strategies (both business and IT strategies) practiced in ERCA. The descriptive analysis reveals that 95.5% of the respondents knows the business strategy of the organization (Table 4.5).

Table 4.4 Business unit

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	IT	56	42.1	42.7	42.7
	Management/ core business/ planning	65	48.9	49.6	92.4
	Both (works on IT & business)	10	7.5	7.6	100.0
	Total	131	98.5	100.0	
Missing	System	2	1.5		
Total		133	100.0		

Table 4.5 Strategic vision and missions of organization

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No I didn't know	4	3.0	3.1	3.1
	Yes I know	127	95.5	96.9	100.0
	Total	131	98.5	100.0	
Missing	System	2	1.5		
Total		133	100.0		
Do you know your organization business and IT strategy					
I know business strategy		56	42.1	44.1	44.1
I know IT strategy		29	21.8	22.8	66.9
I know business & IT strategies		22	16.5	17.3	84.3
I did not know business & IT strategies		20	15.0	15.7	100.0
Total		127	95.5	100.0	

Business strategy

Business strategy was measured using four sub-variables: business drive change, business scope, business competency and business governance. There was a series of questions distributed to respondents in an effort to gather reliable data for analysis.

Applying the SAM model to public organizations might not address some internal resources holistically, but the model is more relevant in examining external factors(Mohamed & Khalifa, 2016). The outcomes from the descriptive analysis of the data of each sub-variable are presented as follow.

- **Business drives change**

After analyzing responses from the study sample through descriptive statistics (Table 4.6), it was revealed that business strategy leading overall changes in the organization, as many (38.3%) of the respondents agree with this statement (as you see the following table). In addition, more than half (58.6%) of the respondents agreed with the fact that ERCA motivates IT department to developing an IT strategy (Table 4.7).

Table 4.6 Business strategy drives change (BSDC1) descriptive statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
	Dis-agree	7	5.3	5.6	7.2
	Medium	42	31.6	33.6	40.8
	Agree	51	38.3	40.8	81.6
	Strongly agree	23	17.3	18.4	100.0
	Total	125	94.0	100.0	
Missing	System	8	6.0		
Total		133	100.0		

Table 4.7 Business strategy drives change (BSDC2) descriptive statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly dis-agree	2	1.5	1.5	1.5
	Dis-agree	3	2.3	2.3	3.8
	Medium	15	11.3	11.5	15.3
	Agree	78	58.6	59.5	74.8
	Strongly agree	33	24.8	25.2	100.0
	Total	131	98.5	100.0	
Missing	System	2	1.5		
Total		133	100.0		

- **Business scope**

When we see the business scope (table 4.8), greater than half (58.6%) of respondents agreed the business scope expands on every business activities and progress (e.g. service, product, customers). And 58.6% of the respondents agreed on the business strategy affects every organizational activities and progress e.g. Service, customer.

Table 4.8 Business scope (BS1) descriptive statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly dis-agree	4	3.0	3.1	3.1
	Dis-agree	7	5.3	5.3	8.4
	Medium	14	10.5	10.7	19.1
	Agree	78	58.6	59.5	78.6
	Strongly agree	28	21.1	21.4	100.0
	Total	131	98.5	100.0	
Missing	System	2	1.5		
Total		133	100.0		

Table 4.9 Business scope (BS2) descriptive statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly dis-agree	3	2.3	2.4	2.4
	Dis-agree	2	1.5	1.6	4.0
	Medium	41	30.8	32.8	36.8
	Agree	53	39.8	42.4	79.2
	Strongly agree	26	19.5	20.8	100.0
	Total	125	94.0	100.0	
Missing	System	8	6.0		
Total		133	100.0		

- **Business competency**

With respect to business competency (Table 4.10), more than half (51.9%) of the respondents agreed that the business competency plays as comparative advantage over competitors (E.g.; - service quality, research, multimedia and channels. And 53.4% of the respondents agreed that the organization strategy navigates past experiences and future to achieve organization goal. E.g. organizational SWOT and PESTLE analysis (Table 4.11).

Table 4.10 Business competency (BC1) descriptive statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly dis-agree	2	1.5	1.6	1.6
	Dis-agree	4	3.0	3.3	4.9
	Medium	28	21.1	22.8	27.6
	Agree	69	51.9	56.1	83.7
	Strongly agree	20	15.0	16.3	100.0
	Total	123	92.5	100.0	
Missing	System	10	7.5		
Total		133	100.0		

Table 4.11 Business competency (BC2) descriptive statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Dis-agree	2	1.5	1.7	1.7
	Medium	17	12.8	14.2	15.8
	Agree	71	53.4	59.2	75.0
	Strongly agree	30	22.6	25.0	100.0
	Total	120	90.2	100.0	
Missing	System	13	9.8		
Total		133	100.0		

- **Business governance**

When we see the business governance (Table 4.12), more than half (66.2%) of the respondents agreed that the organization has a wide framework used to run and control the business process. E.g. plan for business regulations and monitoring mechanisms to achieving long term business values. And 48.1% of the respondents agreed that the organization has external business relationship via executive board of directors. E.g. strategic alliances, joint ventures, and technology licensing (Table 4.13).

Table 4.12 Business governance (BG1)descriptive statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Dis-agree	2	1.5	1.5	1.5
	Medium	24	18.0	18.3	19.8
	Agree	88	66.2	67.2	87.0
	Strongly agree	17	12.8	13.0	100.0
	Total	131	98.5	100.0	
Missing	System	2	1.5		
Total		133	100.0		

Table 4.13 Business governance (BG2) descriptive statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly dis-agree	2	1.5	1.5	1.5
	Dis-agree	10	7.5	7.6	9.2
	Medium	28	21.1	21.4	30.5
	Agree	64	48.1	48.9	79.4
	Strongly agree	27	20.3	20.6	100.0
	Total	131	98.5	100.0	
Missing	System	2	1.5		
Total		133	100.0		

Therefore, the results from the descriptive statistics frequency, the value of the four sub-variables of business strategy is displayed as bellow figure 4.1. The outputs of each sub-variables are level-4 (more). Business strategy in the organization takes the level_4 (good) level. The above sections are represent the existence of business strategy on the individual items. Hence, the following graph contains the percentage values for each variable. According to the data from descriptive statistics, the organization have a good (level_4) of business strategy.

Each item is scaled 1 up to 5. 1 is the lowest value and 5 is the heights value. As we can see the graph below, the level depicted that the organization is at a good state (level_4). This indicates, the business strategy in the organization is stated well. The expected maturity level is most/best/level_5, while the result shows level_4, it shows still there is a gap on the business strategy development.

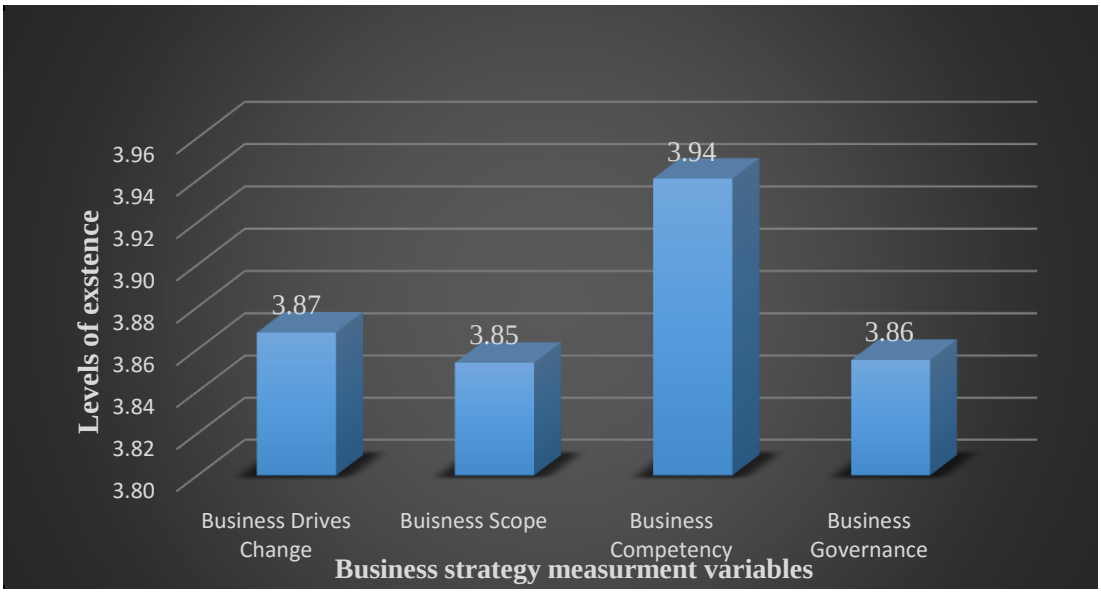

Figure 4.1 Business Strategy Occurrence Measurement, Source: Survey data

Information technology (IT) strategy

Information technology strategy was measured using four sub-variables: information technology strategies support the business, information technology scope, and information technology competency and information technology governance. There was a series of questions distributed to respondents in an effort to gather reliable data for analysis.

- **IT strategies support the business**

When analyzing IT strategy as you see in the following Table s, it was revealed that ERCA had formed IT department as a part of working unit (like: finance, HR and other department), as many (41.4%) of the respondents strongly agree with this statement (see Table 4.14). In addition, more than one-third (35.3%) strongly agree with the fact that The IT department developing IT strategies to support the goal of the organization (Table 4.15).

Table 4.14 IT strategy support the business (ITSSB1) descriptive statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Dis-agree	2	1.5	1.5	1.5
	Medium	33	24.8	25.2	26.7
	Agree	41	30.8	31.3	58.0
	Strongly agree	55	41.4	42.0	100.0
	Total	131	98.5	100.0	
Missing	System	2	1.5		
Total		133	100.0		

Table 4.15 IT strategy support the business (ITSSB2) descriptive statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly did-agree	2	1.5	1.5	1.5
	Dis-agree	2	1.5	1.5	3.1
	Medium	10	7.5	7.6	10.7
	Agree	70	52.6	53.4	64.1
	Strongly agree	47	35.3	35.9	100.0
	Total	131	98.5	100.0	
Missing	System	2	1.5		
Total		133	100.0		

- **IT scope**

With respect to information technology scope, around 48.9% of the respondents agreed that the organization has using applications with the scope of information technology such as: - audio, video, text processing and database (Table 4.16). And 67.7% of the respondents agreed that ERCA has using technologies such as: networks (intranet, internet) and robotics for a new business opportunities (Table 4.17).

Table 4.16 : IT scope (ITS1) descriptive statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Dis-agree	3	2.3	2.3	2.3
	Medium	24	18.0	18.3	20.6
	Agree	65	48.9	49.6	70.2
	Strongly agree	39	29.3	29.8	100.0
	Total	131	98.5	100.0	
Missing	System	2	1.5		
Total		133	100.0		

Table 4.17 IT scope (ITS2) descriptive statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Medium	6	4.5	4.6	4.6
	Agree	90	67.7	68.7	73.3
	Strongly agree	35	26.3	26.7	100.0
	Total	131	98.5	100.0	
Missing	System	2	1.5		
Total		133	100.0		

- **IT competency**

With respect to IT competency, 43.6% of the respondents strongly agreed that IT strategy highly supports the business strategy. E.g. to improve product quality and attract more customers (Table 4.18). And more than one-third (38.3%) of the respondents strongly agreed that ERCA has using enterprise wide systems such as: - SAP, ERP, CSM, and other applications (Table 4.19).

Table 4.18 IT competency (ITC1) descriptive statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly dis-agree	2	1.5	1.5	1.5
	Dis-agree	2	1.5	1.5	3.1
	Medium	26	19.5	19.8	22.9
	Agree	43	32.3	32.8	55.7
	Strongly agree	58	43.6	44.3	100.0
	Total	131	98.5	100.0	
Missing	System	2	1.5		
Total		133	100.0		

Table 4.19 IT competency (ITC2) descriptive statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly dis-agree	6	4.5	4.8	4.8
	Dis-agree	6	4.5	4.8	9.6
	Medium	17	12.8	13.6	23.2
	Agree	45	33.8	36.0	59.2
	Strongly agree	51	38.3	40.8	100.0
	Total	125	94.0	100.0	
Missing	System	8	6.0		
Total		133	100.0		

- **IT governance**

With regard to IT governance, more than one-third (40.6%) of the respondents agreed that ERCA has a number of IT management activities for the executive management assigning IT roles and responsibilities, defining constraints within which IT operates, measuring performance, managing risk and obtaining assurance (Table 4.20). 31.6 % of the respondents agreed that ERCA has proceed doing the external relationships (such as, outsourcing alliances, joint research and development) (Table 4.21). And also more than one-third (33.8%) of the respondents strongly agreed that The IT directorate has using a frameworks like: - COBIT and ITIL for a holistic management of IT governance processes in the organization (Table 4.22).

Table 4.20 IT governance (ITG1) descriptive statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Dis-agree	3	2.3	2.3	2.3
	Medium	27	20.3	20.9	23.3
	Agree	54	40.6	41.9	65.1
	Strongly agree	45	33.8	34.9	100.0
	Total	129	97.0	100.0	
Missing	System	4	3.0		
Total		133	100.0		

Table 4.21 IT governance (ITG2) descriptive statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly dis-agree	2	1.5	1.6	1.6
	Dis-agree	4	3.0	3.1	4.7
	Medium	40	30.1	31.0	35.7
	Agree	42	31.6	32.6	68.2
	Strongly agree	41	30.8	31.8	100.0
	Total	129	97.0	100.0	
Missing	System	4	3.0		
Total		133	100.0		

Table 4.22 IT governance (ITG3) descriptive statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Dis-agree	5	3.8	3.9	3.9
	Medium	37	27.8	29.1	33.1
	Agree	40	30.1	31.5	64.6
	Strongly agree	45	33.8	35.4	100.0
	Total	127	95.5	100.0	
Missing	System	6	4.5		
Total		133	100.0		

Therefore, the results from the descriptive statistics frequency, the value of the four sub-variables of IT strategy is displayed as bellow figure 4.2. The outputs of each sub-variables are level-4 (good). IT strategy in the organization takes the level_4 (good) level. The above sections are represent the existence of IT strategy on the individual items. Hence, the following graph contains the percentage values for each variable. According to the data from descriptive statistics, the organization have a good (level_4) of IT strategy.

Each item is scaled 1 up to 5. 1 is the lowest value and 5 is the heights value. As we can see the graph below, the level depicted that the organization is at a good state (level_4). This indicates, the IT strategy in the organization is stated well. The expected maturity level is most/best/level_5, while the result shows level_4, it shows still there is a gap on the IT strategy development.

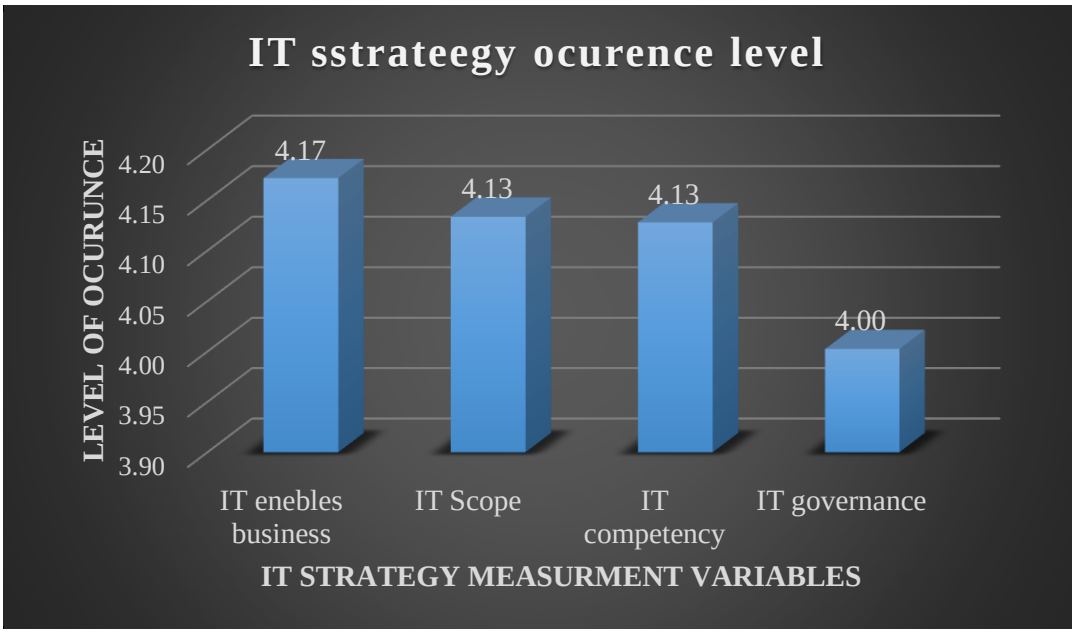

Figure 4.2 IT strategy occurrence level (source: from survey data)

Strategic alignment (SA)

As discussed in chapter two, strategic alignment maturity criteria's was examined on the basis of six sub-variables: communication, competency, governance, partnership, scope and architecture, and skills according the strategic alignment maturity model. Respondents in this study sample were asked a series of questions in an effort to extract reliable information for analysis that measure the level of alignment maturity in the organization based on the SAMM (Luftman, 2000), it ranges from level 1 that indicated the lower level of alignment to level 5 which indicates that the heights level of alignment. Three (3) indicates moderate level of alignment between business and IT, the outcomes from descriptive analysis displayed below.

- **Communication**

Analyzing this sub-variable of strategic alignment as shown in the Table 4.23, the majority of respondents (45.9%) believe that An IT understands (to what extent?) the organization's business environment (e.g., its customers, processes, partners/alliances) and has a high level of alignment (level 4 /more). Greater than half (56.4%) of the respondents revealed more (level 4) response to Business professionals clearly understand the IT environment (Table 4.24).Also 48.9% of the respondents agreed more (level-4) that the IT and business communication style is informal and flexible (4.25).

Table 4.23 Communication (SAC1) descriptive statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less	4	3.0	3.2	3.2
	Medium	40	30.1	31.7	34.9
	More	61	45.9	48.4	83.3
	Most	21	15.8	16.7	100.0
	Total	126	94.7	100.0	
Missing	System	7	5.3		
Total		133	100.0		

Table 4.24 Communication (SAC2) descriptive statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Least	4	3.0	3.2	3.2
	Less	2	1.5	1.6	4.8
	Medium	32	24.1	25.4	30.2
	More	75	56.4	59.5	89.7
	Most	13	9.8	10.3	100.0
	Total	126	94.7	100.0	
Missing	System	7	5.3		
Total		133	100.0		

Table 4.25 Communication (SAC3) descriptive statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less	9	6.8	7.1	7.1
	Medium	29	21.8	23.0	30.2
	More	65	48.9	51.6	81.7
	Most	23	17.3	18.3	100.0
	Total	126	94.7	100.0	
Missing	System	7	5.3		
Total		133	100.0		

- **Competency**

When analyzing the competency as sub-variable of strategic alignment displayed in Table 4.26, many of the respondents (49.6%) agreed more (level 4) they routinely assess and/or review IT investments and have a formal process in place to make changes based on the results and measure. More than half respondents (57.9%) agreed more (level 4) they have well established IT-Business continuous improvement practices and effectiveness measures in place (Table 4.27). A similar responses by respondents (59.4%) was agreed more the demonstrated contribution that the IT function has made to the accomplishment of the organization's strategic goals is very strong (Table 4.28).

Table 4.26 Competency (SACOM1) descriptive statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Least	2	1.5	1.5	1.5
	Medium	41	30.8	31.3	32.8
	More	66	49.6	50.4	83.2
	Most	22	16.5	16.8	100.0
	Total	131	98.5	100.0	
Missing	System	2	1.5		
Total		133	100.0		

Table 4.27 Competency (SACOM2) descriptive statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less	2	1.5	1.5	1.5
	Medium	32	24.1	24.4	26.0
	More	77	57.9	58.8	84.7
	Most	20	15.0	15.3	100.0
	Total	131	98.5	100.0	
Missing	System	2	1.5		
Total		133	100.0		

Table 4.28 Competency (SACOM3) descriptive statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Least	2	1.5	1.5	1.5
	Medium	23	17.3	17.6	19.1
	More	79	59.4	60.3	79.4
	Most	27	20.3	20.6	100.0
	Total	131	98.5	100.0	
Missing	System	2	1.5		
Total		133	100.0		

- **Governance**

The analysis of the result presented in Table 4.29 related to governance, revealed that (48.1%) of the respondents reported that they do formal strategic business planning at the functional units. 62.4% of the respondents agreed that they do formal strategic IT planning at the functional units(Table 4.30). The similar level of alignment was reported by 62.4% of the respondents about ability of the IT function to react/respond quickly to the organization's changing business needs is very strong (Table 4.31).

Table 4.29 Governance (SAG1) descriptive statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Least	2	1.5	1.5	1.5
	Medium	38	28.6	29.0	30.5
	More	64	48.1	48.9	79.4
	Most	27	20.3	20.6	100.0
	Total	131	98.5	100.0	
Missing	System	2	1.5		
Total		133	100.0		

Table 4.30 Governance (SAG2) descriptive statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Medium	27	20.3	20.6	20.6
	More	83	62.4	63.4	84.0
	Most	21	15.8	16.0	100.0
	Total	131	98.5	100.0	
Missing	System	2	1.5		
Total		133	100.0		

Table 4.31 Governance (SAG3) descriptive statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Least	2	1.5	1.5	1.5
	Less	2	1.5	1.5	3.1
	Medium	18	13.5	13.7	16.8
	More	83	62.4	63.4	80.2
	Most	26	19.5	19.8	100.0
	Total	131	98.5	100.0	
Missing	System	2	1.5		
Total		133	100.0		

- **Partnership**

Based on the results presented in the following Table s, more respondents (47.4%) of the survey reported level-4 concerning IT is perceived by the business as a partner with the business that co-adapts/improvises in bringing value to the organization (Table 4.32). more than half (52.6%) of the respondent agreed more (level-4) on the role of IT in strategic business planning is co-adaptive to enable/drive strategic objectives (Table 4.33). Also 50.4% of respondents revealed more (level-4), they have defined programs to manage relationships and both IT and the business comply with them, and we are continuously improving them (Table 4.34).

Table 4.32 Partnership (SAP1) descriptive statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Least	2	1.5	1.5	1.5
	Less	9	6.8	6.9	8.4
	Medium	32	24.1	24.4	32.8
	More	63	47.4	48.1	80.9
	Most	25	18.8	19.1	100.0
	Total	131	98.5	100.0	
Missing	System	2	1.5		
Total		133	100.0		

Table 4.33 Partnership (SAP2) descriptive statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Least	2	1.5	1.6	1.6
	Less	5	3.8	3.9	5.4
	Medium	18	13.5	14.0	19.4
	More	70	52.6	54.3	73.6
	Most	34	25.6	26.4	100.0
	Total	129	97.0	100.0	
Missing	System	4	3.0		
Total		133	100.0		

Table 4.34 Partnership (SAP3) descriptive statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Least	2	1.5	1.5	1.5
	Less	8	6.0	6.0	7.5
	Medium	36	27.1	27.1	34.6
	More	67	50.4	50.4	85.0
	Most	20	15.0	15.0	100.0
	Total	133	100.0	100.0	

- **Scope and architecture**

Whilst gathering information about scope and architecture, it is recognized that 66.9% (level-4) of the study sample reported that their primary systems are business strategy drives change in the organization (Table 4.35). 45.1% of the respondents stated that their IT standards are defined and enforced across functional units (Table 4.36). And more than half (61.7%) of the respondents indicated that the business or IT change is transparent across the organization and to our business partners/alliances, which is a level-4 of alignment and considered high (Table 4.37).

Table 4.35 Scope and arc (SASA1) descriptive statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less	2	1.5	1.5	1.5
	Medium	30	22.6	22.6	24.1
	More	89	66.9	66.9	91.0
	Most	12	9.0	9.0	100.0
	Total	133	100.0	100.0	

Table 4.36 Scope and arc (SASA2) descriptive statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Medium	31	23.3	23.3	23.3
	More	60	45.1	45.1	68.4
	Most	42	31.6	31.6	100.0
	Total	133	100.0	100.0	

Table 4.37 Scope and arc (SASA3) descriptive statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less	5	3.8	3.8	3.8
	Medium	26	19.5	19.5	23.3
	More	82	61.7	61.7	85.0
	Most	20	15.0	15.0	100.0
	Total	133	100.0	100.0	

- **Skills**

When gathering data related to skills as a significance attribute for strategic alignment, 54.6% of the respondents agreed more that Innovation is strongly encouraged at the functional unit, corporate level, and with business partners/alliances, indicating more(level-4) of alignment (Table 4.38). 38.3% of the respondents agreed more about change readiness programs are in place at the corporate level and they are proactive and anticipate change, level-4 (Table 4.39). Further, almost near to half of the respondents (42.1%) reported a more level of the effective programs are in place to attract and retain the best IT professionals with both technical and business skills (Table 4.40).

Table 4.38 Skills (SAS1) descriptive statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Least	2	1.5	1.6	1.6
	Less	5	3.8	3.9	5.5
	Medium	22	16.5	17.2	22.7
	More	73	54.9	57.0	79.7
	Most	26	19.5	20.3	100.0
	Total	128	96.2	100.0	
Missing	System	5	3.8		
Total		133	100.0		

Table 4.39 Skills (SAS2) descriptive statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Medium	38	28.6	29.7	29.7
	More	51	38.3	39.8	69.5
	Most	39	29.3	30.5	100.0
	Total	128	96.2	100.0	
Missing	System	5	3.8		
Total		133	100.0		

Table 4.40 Skills (SAS3) descriptive statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Medium	25	18.8	19.5	19.5
	More	56	42.1	43.8	63.3
	Most	47	35.3	36.7	100.0
	Total	128	96.2	100.0	
Missing	System	5	3.8		
Total		133	100.0		

Categorized and summarized results from the descriptive statistics frequency, the value of the six sub-variables of strategic alignment is displayed as bellow figure. The outputs of each sub-variables are level-4 (more). The strategic alignment of business and information technology in the organization takes the level_4 (more) levels of alignment. The above sections are represent the level of alignment on the individual variables. Hence, the following graph contains the percentage values of alignment for each variable. Therefore, according to the data from descriptive statistics, the organization have a good (level_4) alignment between business and information technology strategies.

Each item is scaled 1 up to 5. 1 is the lowest value and 5 is the heights value. As we can see the graph below, the total maturity level depicted that the organization is at a good state (level_4). This indicates, the business and information technology alignment is in good state. The interview data also shows, the organization strives to align the business needs and information technology by cooperation and coordination with right stakeholders like Tele, commercial banks of Ethiopia. The expected maturity level is most/best/level_5, while the result shows level_4, it shows still there is a gap for full levels of alignment between business and IT strategies.

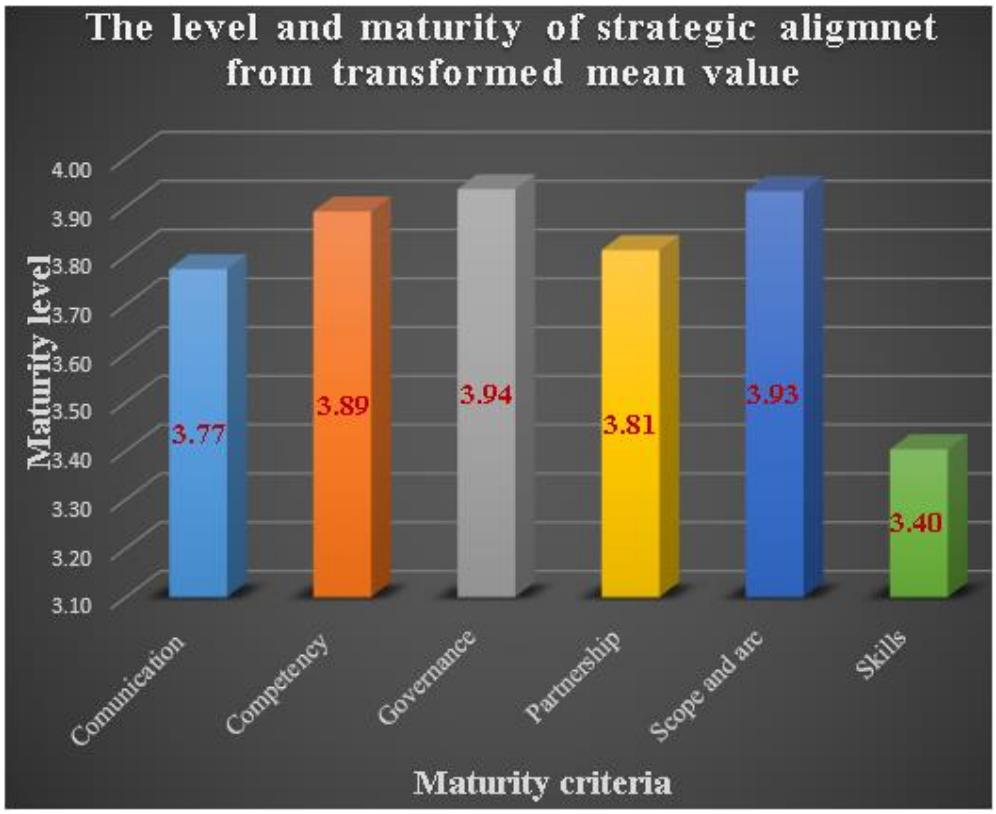

Figure 4.3 Maturity levels of BITA in ERCA

Organizational performance

Organizational performance was evaluated through the use of different sub-variables, which are stakeholder satisfaction, process and capabilities. The outcomes extracted from descriptive analysis of the data gathered from study sample are given below.

- **Stakeholder satisfaction**

According to the result presented in Figure 4.2, 38.3% of the respondents agreed more on the statement delivery of services meet customers' needs. According to 42.1% of the respondents agreed more on the strategy that adopted for new service development (Figure 4.3). And also more than half (54.1%) of the respondents agreed more on the statement, currently adopted strategy improve outcomes for the organization (Figure 4.4). Therefore, strategies that currently adopted in the organization have a positive impact on stakeholder's satisfaction.

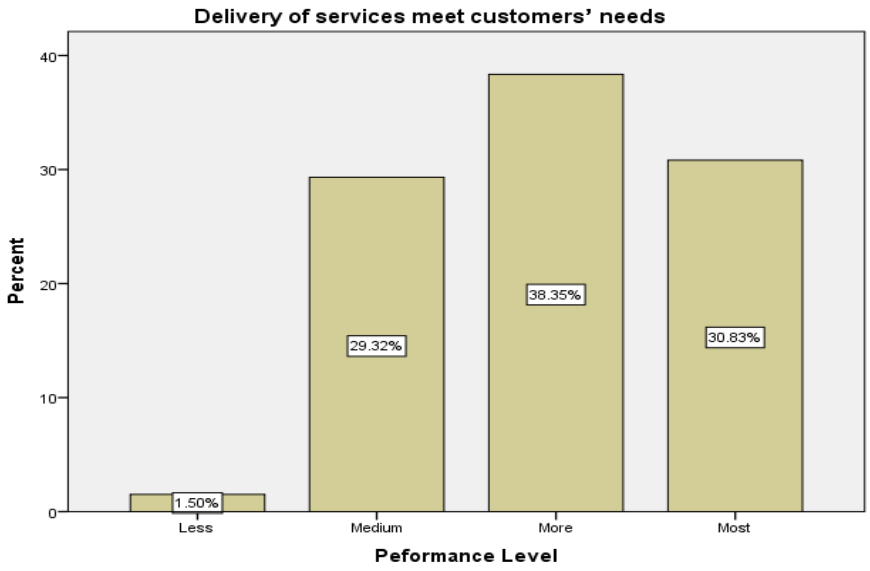

Figure 4.1 Delivery of services meet customers' needs

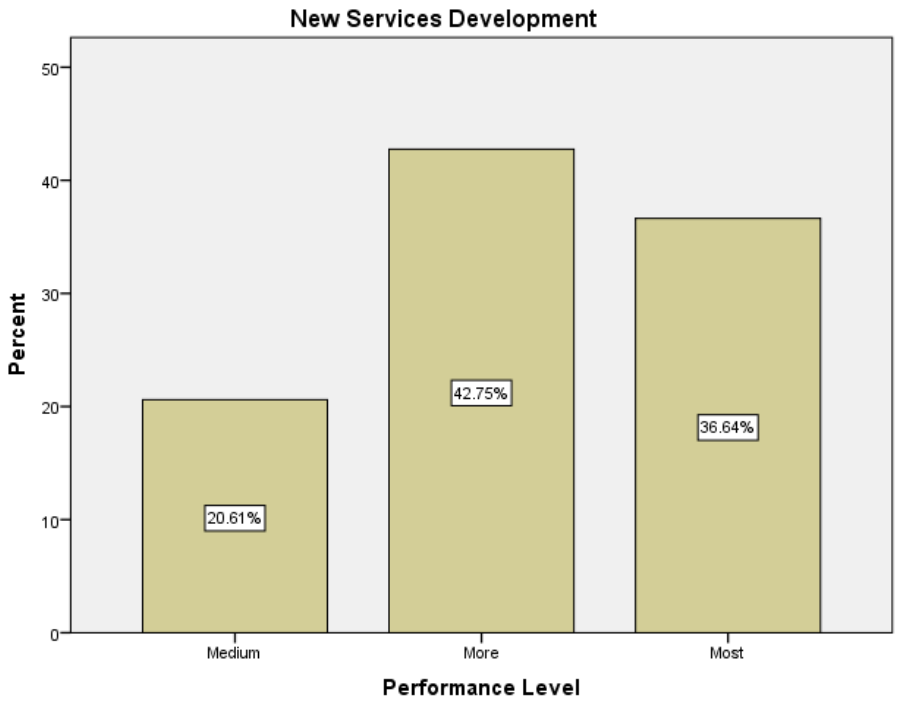

Figure 4.2 New Services Development

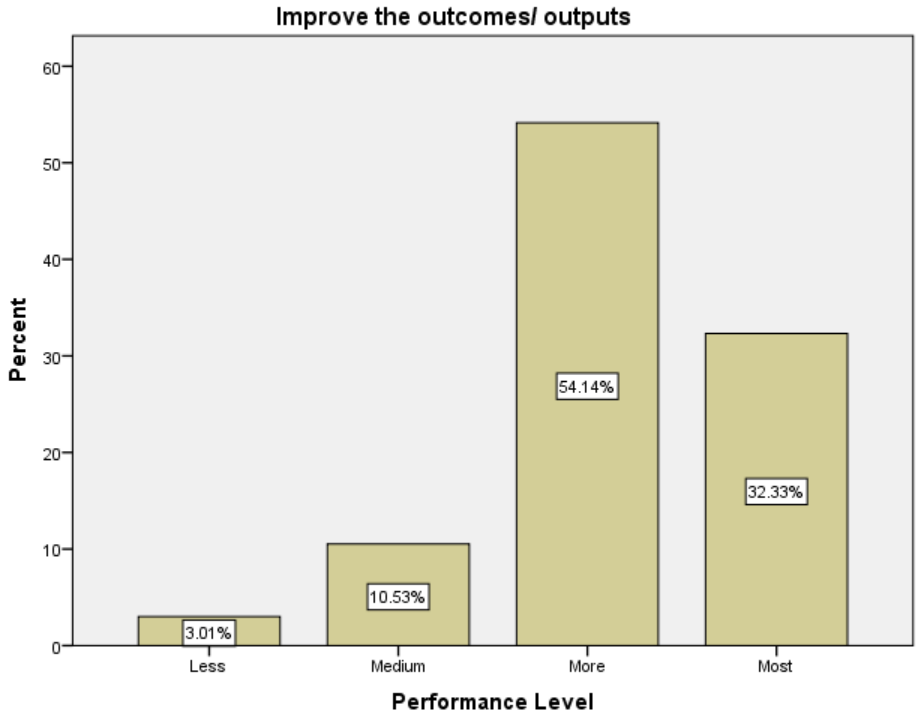

Figure 4.3 Improve the outcomes/ outputs

- **Process**

According to figure 4.5, more than half (50.4%) of the respondents agreed more on the statement, currently adopted strategies in the organization significantly increases responsiveness to clients. The adopted strategies also assist in the enhancement of business process, mostly agreed (42.9%) by the respondents from the sample (figure 4.6). 46.6% of the respondents agreed more that currently adopted strategies assist in attaining on timely design making activities (figure 4.7). Near to half (44.4%) of the respondents recognized that those adopted strategies increases the cooperation between departments (figure 4.8).

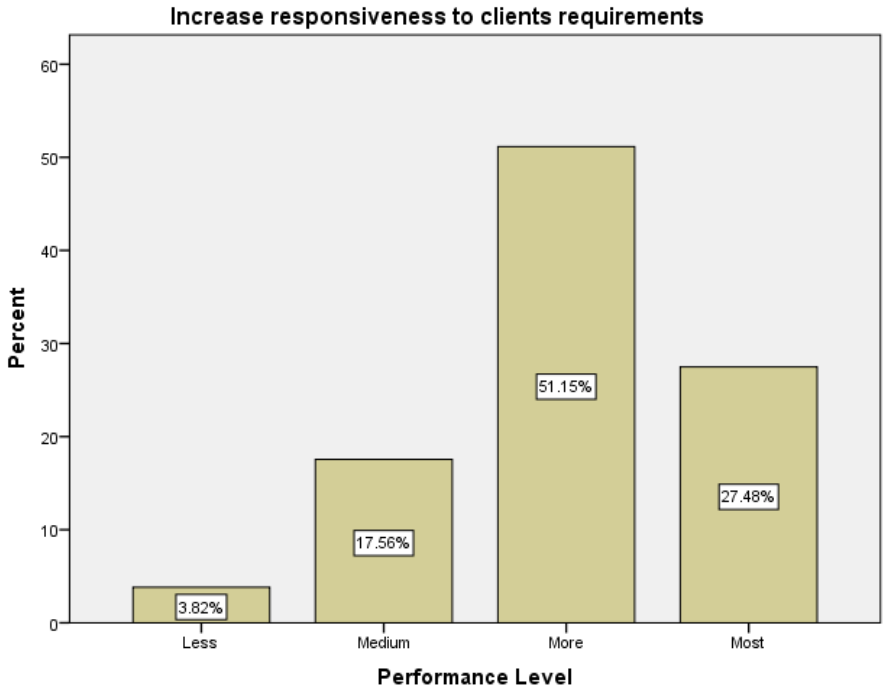

Figure 4.4 Increase responsiveness to clients' requirements

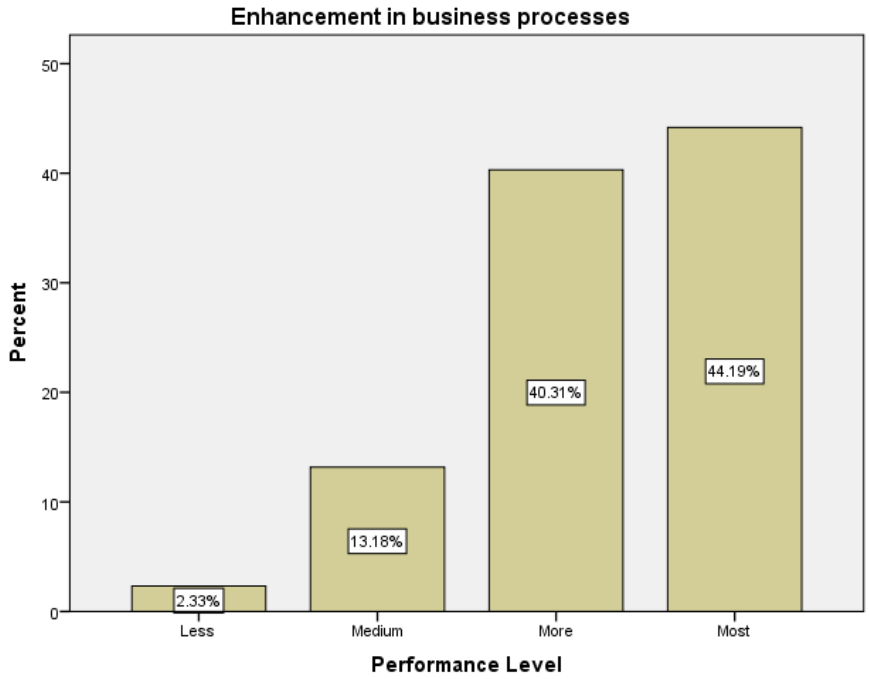

Figure 4.5 Enhancement in business processes

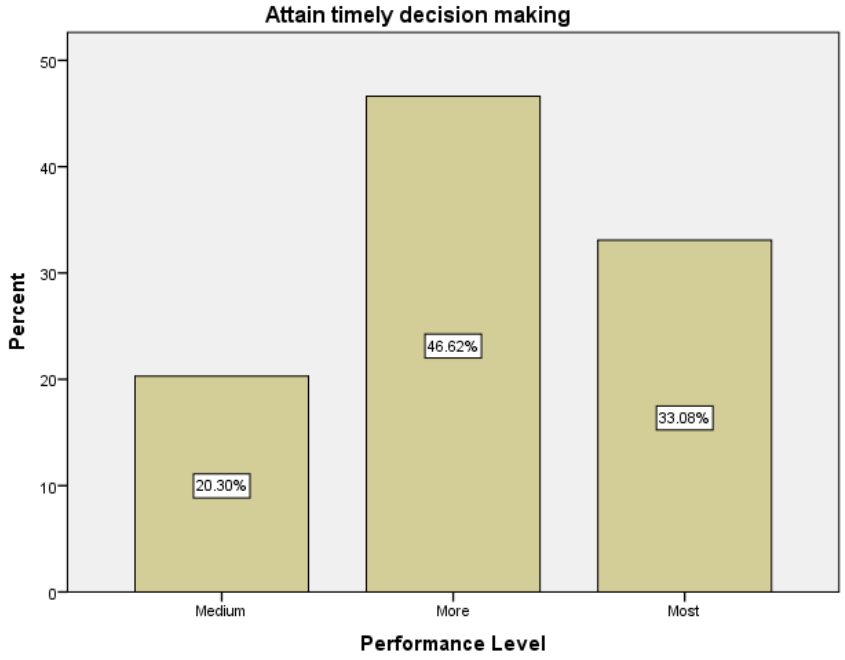

Figure 4.6 Attain timely decision making

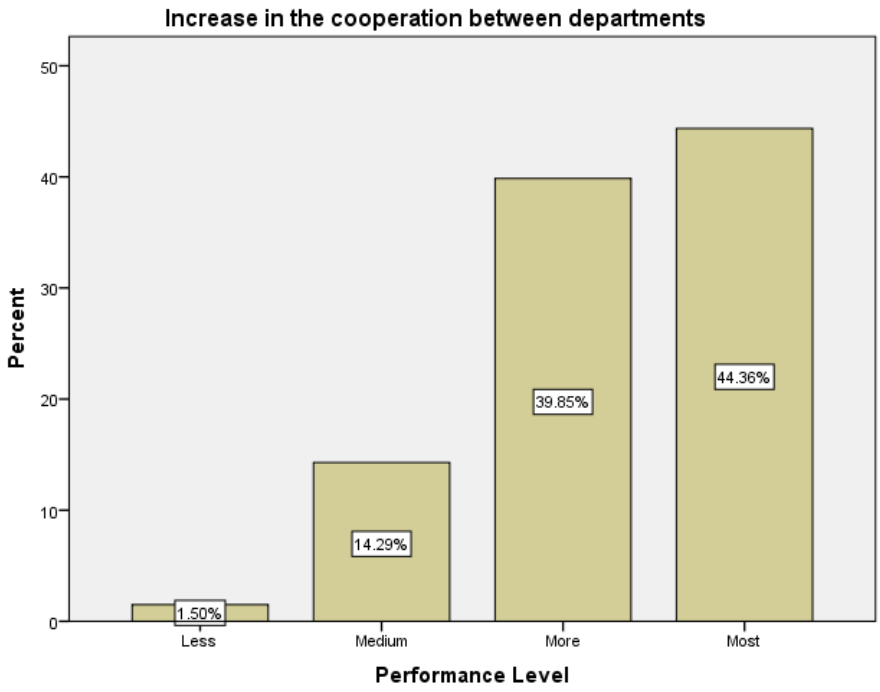

Figure 4.7 Increase in the cooperation between departments

- **Capabilities**

According to the result extracted from descriptive analysis of the data shown in the following Table s, currently adopted strategies in the organization are seen to have a most of more effect on capabilities. As per the responses extracted from 39.1% of the study sample, such strategies are a more impact on increasing the innovation capabilities (figure 4.9).According to 45.1% of the respondents agreed more by the statement strategies assisted in development of effective training programs in the organization (figure 4.10). Similarly 48.1% of the respondents agreed more by the statement, strategies increase organizational capacity (figure 4.11). And also 41.4% of the respondents mostly agree on the statement, BSC is one of the performance measure used by the organization as a strategy (figure 4.12).

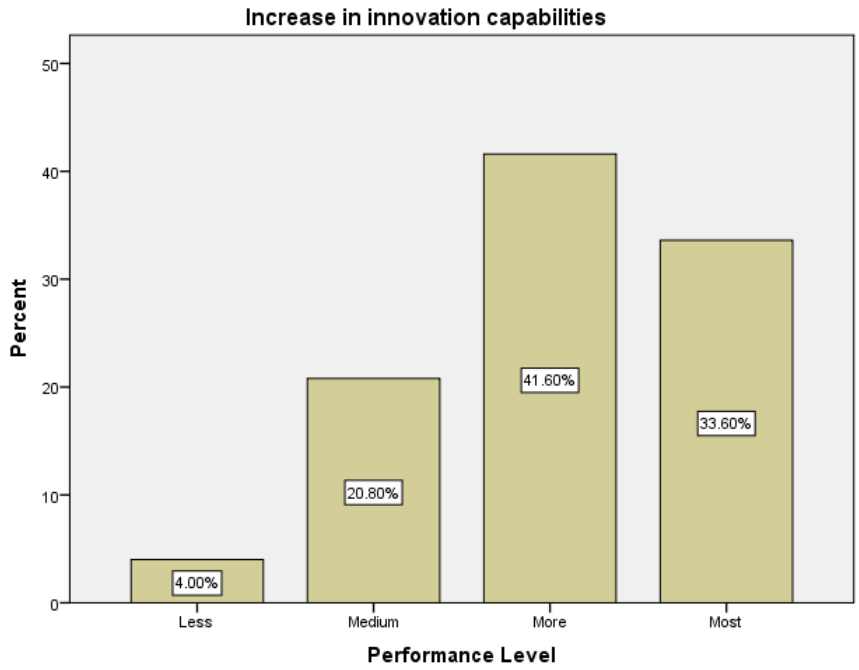

Figure 4.8 Increase in innovation capabilities

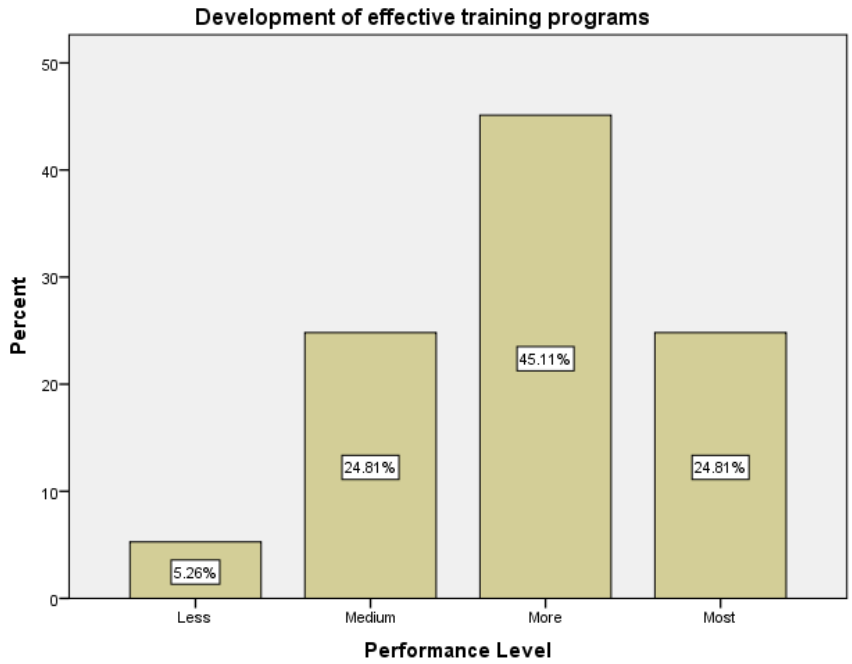

Figure 4.9 Development of effective training programs

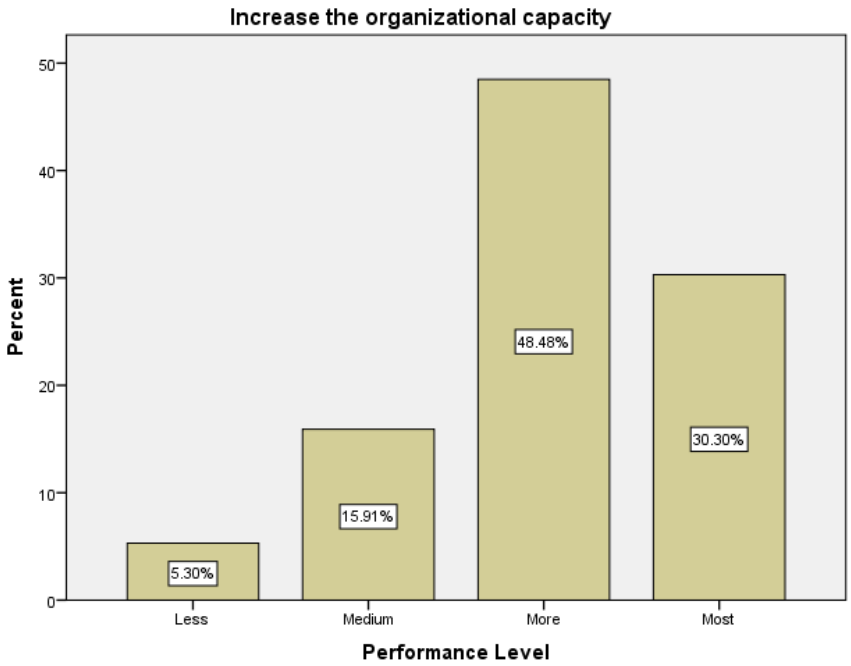

Figure 4.10 Increase the organizational capacity

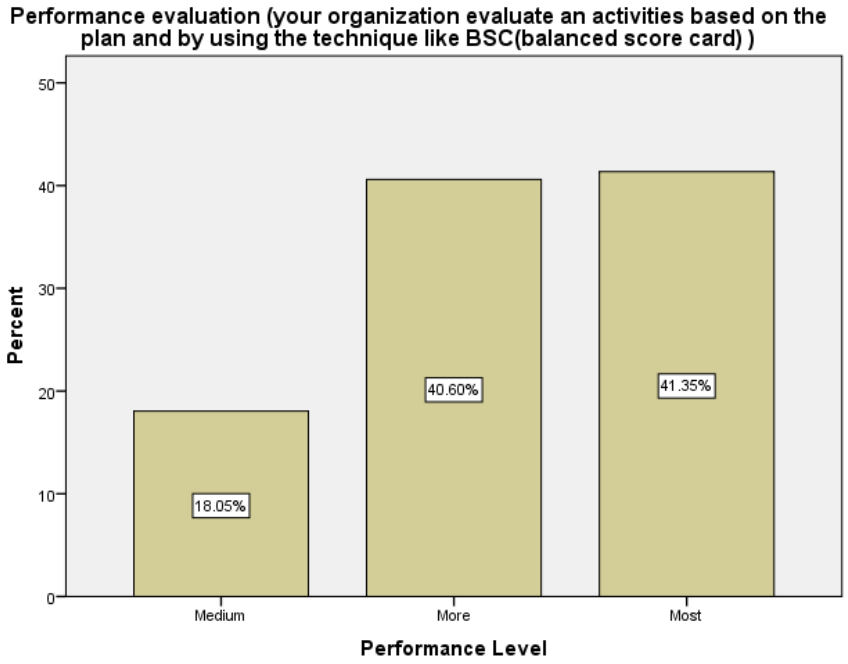

Figure 4.11 Performance evaluation (your organization uses BSC)

Therefore, the results from the descriptive statistics frequency, the value of the three sub-variables of organizational performance is displayed as bellow figure. The outputs of each sub-

variables are level-4 (good). Organizational performance in the organization scores a good level. The above sections are represent the existence of organizational performance on the individual items. Hence, the following graph contains the percentage values for each variable. According to the data from descriptive statistics, the organization have a good level of organizational performance.

Each item is scaled 1 up to 5. 1 is the lowest value and 5 is the heights value. As we can see the graph below, the level depicted that the organization is at a good state. This indicates, the organizational performance in the organization is stated well. The expected maturity level is most/best/level-5, while the result shows level-4, it shows still there is a gap on the organizational performance enhancement.

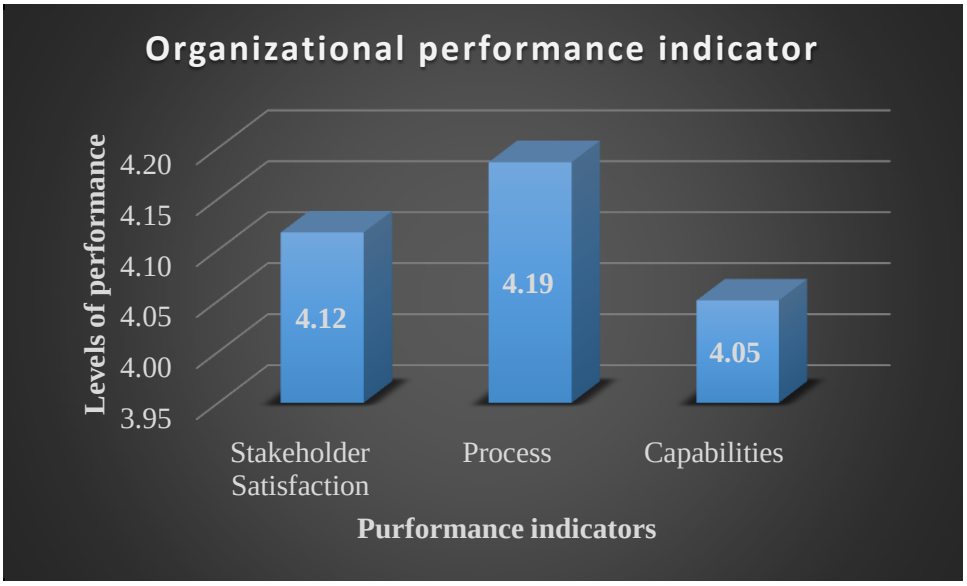

Figure 4. 12 Organizational performance measurement, source from survey data

4.5. Regression analysis

To test the hypotheses, the regression analysis was used to test the hypotheses. The variables business strategy and IT strategy are considered as independent variable and strategic alignment is dependent variable to test H1 and H2. As well as, check hypothesis-3, strategic alignment considered as independent variable to test organizational performance (dependent variable).

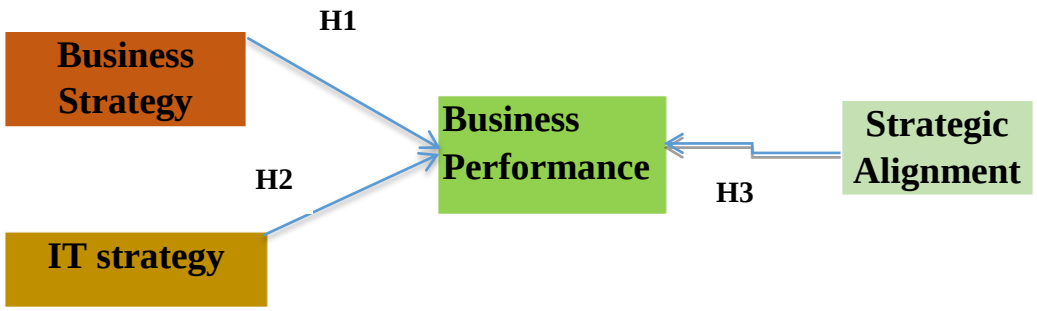

Figure 4.12 Hypothesis test on BITA and organizational performance

Hypothesis-1 (H1)

As the first hypothesis states, business strategy variables positively affects the organizational performance. This hypothesis is first tested using the regression analysis via SPSS. As revealed by the ANOVA Table, the significant value is less than 0.05, meaning that the model is statistically significance (Table 4.41). The table contains the computed business strategy (business drives change, business scope, business governance business competency) and strategic alignment (communication, competency, governance, partnership, scope and architecture and skills) with corresponding items.

Table 4.41 Regression between organizational performance and business strategy

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.640	1	.640	4.478	.037[b]
	Residual	14.730	103	.143		
	Total	15.370	104			

a. Dependent Variable: organizational performance

b. Predictors: (Constant), Business Strategy

The coefficients table extracted from the analysis of the data reveals that 1 unit change in 'business strategy' is responsible for 0.23 unit change in 'strategic alignment' (Table 4.42). Moreover, the following table explains that the partiality of the relationship between the variables is positive and significant as the sig value is less than 0.05. Therefore, Hypothesis 1, stating 'business strategy' variables positively affects the 'strategic alignment', can be accepted.

Table 4.42 Business strategy and organizational performance Coefficientsa Table

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.041	.428		7.112	.000
	Business Strategy	.230	.109	.204	2.116	.037

a. Dependent Variable: Strategic alignment

Hypothesis-2 (H2)

Hypothesis 2 states that information technology strategy variables (included all sub-variables) positively affects the organizational performance (all sub-variables are included). This hypothesis also tested with using regression analysis. The significance value, as revealed by the ANOVA Table, is less than 0.05, meaning that the model is statistically significant (Table 4.43).

Table 4.43 Regression between organizational performance and IT strategy

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	6.805	1	6.805	68.458	.000[b]
	Residual	10.636	107	.099		
	Total	17.440	108			

a. Dependent Variable: organizational performance. Predictors: (Constant), IT strategy

The coefficient Table obtained from the analysis of the data through the regression analysis shows that 1 unit change in 'IT strategy' is responsible for 0.488 unit change in 'strategic alignment' (Table 4.44). The significant value depicted by the coefficients table, is less than 0.05 which is 0.00. Therefore, it can be interpreted that hypothesis 2, stating that IT strategy variables positively affects the strategic alignment, can be accepted.

Table 4.44 organizational performance and IT strategy Coefficientsa Table

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.911	.246		7.778	.000
	IT strategy	.488	.059	.625	8.274	.000

a. Dependent Variable: organizational performance

Hypothesis-3 (H3)

Hypothesis 3 states that strategic alignment have a positive impact on organizational performance. Like previous, this hypothesis is also tested using a similar statistical technique which is regression analysis. The ANOVA table obtained from the analysis of the data shows that significant value is less than 0.05 (Table 4.45). This means the model used for analyzing the relationship between the categorized variables are statistically significant.

Table 4.45 Regression analysis between strategic alignments and organizational performance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	17.514	1	17.514	129.419	.000[b]
	Residual	14.074	104	.135		
	Total	31.589	105			

a. Dependent Variable: organizational performance

b. Predictors: (Constant), Strategic alignment

The coefficients table show that one unit change in strategic alignment is responsible for 1.00 unit change in organizational performance (Table 4.46). The significance value is less than 0.05. Therefore, we can say that strategic alignment has a positive and significant impact on organizational performance. So, Hypothesis 3 can be accepted.

Table 4.46 Strategic alignment and organizational performance Coefficientsa Table

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.228	.351		.648	.518
	Strategic alignment	1.00	.089	.745	11.376	.000

a. Dependent Variable: organizational performance

4.5 Discussion of the Findings

This thesis explored the practice of strategic alignment and its impact on the organizational performance. The variables incorporated for analysis were: business strategy, IT strategy, strategic alignment and organizational performance. Based on statistical result in chapter four, all hypothesizes are statistically significant. The survey was targeted on ERCA's high level taxpayer branch and MIS department, the SAMM questionnaire was used as an assessment instrument. Participants were asked to self-identified as department directors (IT director, HR director, finance director and the like), leaders (Tax admin team leader, customer support team leader and the like) and professionals (like subject matter expert within the organization).

This research has empirically validated the impacts of strategic alignment on the performance of ERCA. The previous research reflected about some variables from SAM, there were hidden/latent variables on their study. The latent variables included in the conceptual framework were IT strategies and business strategies (Mohamed & Khalifa, 2016). So the variables, business strategy and IT strategy is explored in this study. This study was initiated to answer the following research questions and those questions are transformed in to three hypothesis.

1. Where is the level of Business-IT strategic alignment the organization?
2. What is the impact of BITA on organizational performance?

According to the extended conceptual SAM model, the variables such as business strategy, IT strategy, strategic alignment and organizational performance was proposed to answer the above research questions through analyzing empirically the case of ERCA in Addis Ababa, Ethiopia. And from analysis result, the followings were hypothesized. H1- Business strategy can positively affects the alignment of the business and information technology strategies in the organization. H2- IT strategy can positively affects the alignment of the business and information technology strategies in the organization. H3- The alignment of the business and information technology strategies in the organization have a positive impact on the organizational performance

This study examines the existence of business-IT strategies, the relationship between business-IT strategies and the performance of ERCA. In previous researches regarding to business and IT strategic alignment, more of the studies were the maturity levels of alignment with qualitative methods by excluding the impacts BITA on business performance (see Table 2.2). While, the scope of this study is extended to the occurrence of strategies up to business performance with mixed modal approach (by triangulating the qualitative and quantitative data values).

ERCA has developing ITAS from old system STAS. So there is some changes, innovations and it includes or integrates multiple systems not only filing, payment but also includes requesting clearance , requesting refund , requesting report and anything on our transaction performed on this portal. The system creates a readiness to identify the gaps and predict the future activities kike deliverable the systems notify or aware customers through text message. But security is the serious case we have to concern by country level, not by specific organization. Because each activity we are doing online is on cloud. Obviously even now ours conversation is expected it is on the air and we exposed for security. We can say ours poverty protect us from cyber security, but our IT become grow the security also be questionable. We have to secure our system end to end, otherwise the transaction become damaged with unauthorized body. Now we are developing security policy strategy document to enhance the security of the organization. And also we are under process to forming security department as a center level from directorate level (source: transcribed interview data).

All the hypothesis were supported or significant. So, all hypothesis are maintained in the study, which led to answer the above research questions by saying that business strategy and IT strategy and positively affect strategic alignment. Also there is strong link between strategic alignment and organizational performance. The validity of each sub variables was tested in the previous chapter (see Table 4.1).

For the variable business strategy, the sample was asked different questions to measure assistance provided by previously adopted IT projects to different organizational dimensions. The analysis revealed assistance provided previously adopted IT studies to business change, business scope, business competencies and business governance. IT strategy was evaluated and represented by four different sub-variables: IT support, IT scope, IT competency and IT governance. The statistical output of each variables was statistically significance.

The study variable strategic alignment was represented by different sub-variables. These sub-variables were communications, competency, governance, partnership, scope and architecture and skills. The sub-variables depict the role adopted by IT in different organizational aspects, such as communications, competency, governance, partnership, scope and architecture and skills, which cumulatively prosper strategic alignment in ERCA. In this study, the relationship between these sub-variables was explored and found strong. So, the study organization has good strategic alignment.

In this study, organizational performance was represented by diverse sub-variables, which are: stakeholder's satisfaction, processes and capabilities represented organizational performance.

This representation depicted that organizational performance thrived when strategies adopted by organizations assisted in stakeholder satisfaction, processes and capabilities.

This thesis has explored the impact of strategic alignment on organizational performance on the case of Ethiopian revenue and customs authority. The SAMM (Luftman, 2000)was extended in order to measure the strategic alignment between business and IT and the performance of public organizations. Table 5.1 presents the summary of the hypotheses, the path coefficients of the regressions analysis of the model. All of the paths were statistically significant and supporting the associated hypotheses. The following subsections discuss the findings related to each hypothesis.

4.5.1 Findings of business strategy and organizational performance

This study examined the relationship between business strategy and strategic alignment. This relationship is discussed in light of the hypothesis formulated in chapter three. The hypothesis asserts that business strategy has appositive impact on strategic alignment. This study supports a statistically significance relationship between business strategy and strategic alignment. The relationship was validated by analyzing the variables via regression analysis.

The organizational strategy means contain the two things, the organization and strategy. Strategy means just like a road map and it show about where I started and ended. In my understanding, for example as an IT sector, we have IT strategy which is derived from business strategy but nobody can have a power to run out (changing) the strategy out of the business strategy frame. So the IT strategy should align with business strategy because the center IT strategy is part of a business for the organization. The business of our organization is collecting income, collection this income means how to collect by considering the customers satisfaction, identifying obstacles and defining mitigation plan (source: own interview data).

H1: Business strategy positively affects the organizational performance

The first hypothesis of the research study proposes that business strategy have a positive impact on strategic alignment. The coefficient (Table 4.52) revealed that 1 unit change in ‘business strategy’ responsible for 0.230 unit change in strategic alignment. Therefore, hypothesis 1 ‘business strategy have a positive impact on strategic alignment’ is accepted. The business strategy in ERCA assisting in (business change, business scope, business competency and business governance) depicts a significance relationship with strategic alignment within different organizational aspects (communications, competency, governance, partnership, scope and architecture and skills) which cumulatively succeed strategic alignment in the organization.

According to ERCA, to highlight the success of the organization by developing business strategy and highlight the improvements and developments gained from implemented business strategies in order to increase the level of alignment between business and IT.

4.5.2 Findings of IT strategies and organizational performance

The second hypothesis of this research study affirms that information technology strategy influences strategic alignment. This relationship was validated by analyzing the variables through regression analysis. The coefficients (Table 4.55) reveals that 1 unit change in 'IT strategy' is responsible for 0.488 unit changes in strategic alignment. Therefore, Hypothesis 2 "IT strategy positively influences strategic alignment" is accepted. The analysis of the data gathered from respondents further reveals that IT strategy in ERCA has a positive and significant impact on strategic alignment. Findings were not only positive but also significant. Thus, Hypothesis 2 can be accepted.

The organization's IT department is not doing everything alone, IT departments are enablers and we enable the business. Each business have their own customers (taxpayer), to identify their taxpayers should be supported by technology. Assume, a tax center may say I have 1000 taxpayers, must get the number of taxpayers automatically not finding manual file system. It should be by clicking some icon and knows the customers profile such as: who are, how many and transaction information displayed by different formats (e.g. list of payed, unpaid customers). We are using a system called SIGTAS, we are using and it has been in service for fifteen years and it is almost outdated in technology and by its functionalities. SIGTAS was help controlling the queuing but it is not enough, then we are dealing to start e-TAX system that includes e-tax and e-filing components (we give an access 24, 25/7 to filing their transaction periodically) and the recorded files had integrated with e-payment system. Remember, no physical contact to filing between taxpayers and our system (everything is done through system). But e-payment is done by collaborating different systems and stockholders such as banks, taxpayers, ERCA, Derash. Everything is done digitally; we have no physical interaction with customers, except special cases. So there is an alignment, even we (IMS department) saying we are service providers for our organization (branches), like ETC provides a service through ought the country. So there is an alignment between our systems (source: own interview data).

The results have confirmed that the impact showed by IT strategy on strategic alignment shows that ERCA has achieved higher levels of alignment that the occurrence of IT supports the business, IT scope, IT competency and IT governance. This research shows how an IT strategies in a given context have an effect the level of alignment in organization.

4.5.3 Findings of strategic alignment and organizational performance

The performance of the organization is good mainly when we see the increment. Nowadays telecom's is develops a new strategies such as, cost reduction and giving other benefits (advantages) and it also initiates ours customers become eager or aware. ERCA have a link with ETC, and working with ETC by collaboration. When we come to satisfaction, it is unlimited by its nature and it is difficult to say 100% our customers are satisfied. But first we discuss with internal users timely about issues and we are making modifications, then we see the feedback of our customers (the feedback may about time, performance,).

Now, we have two systems ITAS (new/ under deployment) and STAS (old of still work until the new system is fully implemented). So when we see the customers comment, customers are more satisfied by online (ITAS) system rather SITAS (old). Especially large taxpayers are fully using ITAS and they are filing, pay and reporting online. ERCA focus on the big fish. For the sake of reducing workload and easy of management, small taxpayers are simply treated by the bank to bank system (depositing and bring receipt). So we are doing to manage small taxpayers through bank to bank system but we are doing fully focus on for repetitive and large.

H3: Strategic alignment positively impact organizational performance

The coefficients Table (Table 4.56) reveals that 1 unit change in strategic alignment is responsible for 1.00 unit change in organizational performance. So, strategic alignment positively influences organizational performance. The analysis of the data through the application of regression analysis implicates that strategic alignment in ERCA has a significant impact on organizational performance. It can be stated that, it has assisted organizations in enhancing their performance with regard to their strategies, stakeholder satisfaction, processes and capabilities.

According to the outcomes extracted, it can be deduced that 1 unit change in one variable would cause .745 unit positive change in another variable. Thus, the relationship between strategic alignment that is measured using the SAMM (Luftman, 2000) that measure the alignment in five dimensions as presented in chapter 2 and chapter 3 (communications, competency, governance, partnership, scope and architecture and skills in a public organization) and organizational performance (a variable concerning strategies that are currently adopted in an organization to assist in stakeholder satisfaction, processes and capabilities) is quite strong and significant.

Therefore, it can be stated that the strategies adopted by public organizations who achieved higher levels of alignment have assisted them in increasing the level of performance.

CHAPTER FIVE

CONCLUSION and RECOMENDATION

5.1 Conclusion

As we see in the literatures on the track of BITA more researchers (local or international) targeted on business organizations rather than governmental/public organizations. The primary goal of this study was to investigating the current status of BITA and its impact on organizational performances on the case of ERCA. As we discus in chapter two (literature review) the SAM model contains two main components which are internal (infrastructure) and external (strategies). This study focuses on external or strategies (business and IT strategies) and the model in chapter three (the methodology) was designed to measure and address the objective of the study in a mixed approach (both qualitative and quantitative) including hypothesizes. In chapter four (analysis part), the qualitative data collections and systemization was performed face to face and via telephone with top level officials including directors (see appendix: 1) and the quantitative approach was performed via questionnaire for data collection and the data was analyzed with a descriptive statistics and regression. The hypothesis was corresponds with the research problem (questions) and all hypothesis result was positive. Now the time being, in ERCA, according Likert scale (Least, Less, Medium, More and Most) the following key findings are stated:

Business strategy: The study explores, the occurrence of business strategy in the organization. According to the quantitative survey, in ERCA there is a good level of business strategy (the descriptive statistic results of measurements variables showed a good level of occurrence). Its hypothesis result of business from regression analysis was well accepted. This study was faced a consciousness issues on some staffs about strategy (e.g. for the question your organization vision is strategy?, the answer of some respondents was no).

According to the qualitative survey, business strategy drives every change in the organization. The business strategy considered as a road map that defines the visions of the organization by scheduling the initial end destination points.

IT strategy: In ERCA there is a good IT strategies and which are documented based on the guidance of the organization business strategy to enable the business goals and objectives. ERCA have its own MIS department, which coordinate and cooperate the CEO and CIO activities and

process. Security and the absence of well telecom infrastructure are examples of bias, which inhabits the success or maturity of information technology strategy.

Business and information technology strategic alignment (BITA): In ERCA there is a good levels of BITA. One of the main concern of this research was to check the levels of alignment with in the organization and the analysis results shows good ligament. The organization was implemented an automated applications in order to achieve the business strategy. For example, ERCA was implemented SIGTAS before fifteen years ago, it was good for controlling but not including filing system. And now they are under progress to implement e-tax system, which contains filing and controlling. This indicates there in an alliance/alignment between business needs and IT.

Organizational performance: The final research question was BITA have impacts on organizational performance. Yes, BITA has more (level-4) impact on organizational performance (according to the result from descriptive analysis). The hypothesis regarding to business performance was well accepted. Also, according to interview data, the latest technologies which were implemented by ERCA like GITAS, e-TAX have a positive impact on the organizational performance.

Therefore, this study get its targets which were to know the occurrence strategies, relationship between strategies and the impacts of BITA on the organizations performance. The analysis revealed that the strategic alignment is significantly influenced by business strategy and IT strategy besides original factors of the SAM model. Also it has validated the significant impact of strategic alignment on organizational performance of public organizations. The research also suggests that high alignment between the business and IT is due to the positive affect of some variables such as business strategy and IT strategy.

5.2 Research contribution

This thesis has developed and tested empirically a conceptual model which contains the variables business strategy, IT strategy, strategic alignment and organizational performance including interactions between each variables. The qualitative and empirical results support the positive relationship between strategic alignment and business-IT strategies and as well as strategic alignment positively affects the organizational performance. The conceptual model differentiates between the variables used in the literature to measure the strategic alignment and the factors influencing the organizational performance.

To conclude, the results obtained may verify valuable for public organizations. As in the context of ERCA, the fit between strategic alignment and organizational performance is significantly positive. This knowledge, if shared with other public organizations in Ethiopia, might acting as a driver for aligning business and IT strategies in order to improve organizational performance. This research makes beneficiary for different stockholders with in different demographic level. Beneficiary stakeholders like organizational leaderships (like board of directors, executive directors) to set their big vision and pushing the directions in standardized way, managements (like board of management, departments) guides for proper implementations of activities, supervisory managements (like divisions, branches) control the integration of implemented solutions, sections follow up or supervise the list of tasks based on their priority level and operational workers (like developers/ practitioners, budget planning officers, tax administration officers) profited to know the blueprint for a common understanding for their organizational performance business information technology strategic alignment. The researchers also can use this paper as a literature document to explore more about Business-IT alignment thoughts in public organizations.

5.3 Research limitation

Results obtained from Ethiopian revenue and customer authority may be transferable from central city (Addis Ababa) to reginal states and other public organizations but are not claimed as a universally generalized findings. Research on strategic alignment track is still in its infancy in public organizations, accordingly it is crucial to present some of the general limitations of it (Mohamed & Khalifa, 2016). Common challenges this study faces at the time of survey, the pandemic (Covid-19) limits the number of survey plan from multiple public organizations in to one. As well as, the culture of online technology usages and limited infrastructures were biased the online data collection process.

5.4 Recommendations

5.4.1 Recommendations for practice

Business information technology strategic alignment is not a static event rather it needs a continuous improvement. Therefore, to sustain BITA and maximizes an IT investment value the researcher recommends the following practical recommendations.

Business strategy: It is a road map, an agent and drives every change in the organization. Business strategy includes the vision and missions of the organization. This research showed that, ERCA have a moderate level in the usages of business strategy activities, governance and competency. Competitor is good for quality of service and delivery. While, ERCA has not competitors inside the country. Regarding to business strategy, the following are better to be:

- Make sure every workers in the organization have a common understanding on the business strategy of the organization
- ERCA should viewed the companies' expectance from the countries out of Ethiopia for a benchmarking at the time of developing your strategy.

IT strategy: Information technology is dynamic in its nature. It is considered as an enabler or supporter for a business objectives and goals. If we are not close loop wholes, the organization may exposed to security issue. So, it is better:

- MIS department should follow a holistic approach to develop an IT strategies.
- Practice different frameworks like ITIL, COBIT, PESTLE, SMART and so like to enable the business objective.

Business and IT strategic alignment: The alignments of business and IT strategy plays an important role for the success of the organization. Communication, competency, governance, partnership, scope and skills are the common and universally accepted scientific measurements to know the levels of alignment between business and IT. So, it is better:

- Taking a continuous evaluation on the levels of BITA in your organization by using universally accepted BITA Framework

Business performance: Business performance including business continuity and profitability. If you strive to be profitable, you have to align the business needs and IT solutions. Measuring or evaluating the performance of the organization by selecting a better tool or mechanism is recommendable. In ERCA balanced score card is one of the evaluation method for staffs'

performance, it is good. But where is customers' satisfaction evaluation mechanism? For your information customers satisfaction is one of the resentments of organizational performance. So, it is better:

- To figure out your customers satisfaction by using a Frameworks like Performance Prism
- Keep BITA, for the sake of your organization socio-economic development

5.4.2 Recommendation for Future work

Technology becomes so dynamic via time, people and location. If peoples put something today in a given place, it will be difficult to get things as previous (without alteration). The future work could employ a longitudinal study spanning years of investigation in different time periods for the subject under study (Mohamed & Khalifa, 2016). Future research needs to be conducted in a larger scale with more participants/respondents from different context (like: position, location, number, and other demographics). It would also be interesting to see how far the result is affected by incorporating a pure qualitative case study. In this study there is some missing values from their results of SPSS, the next researcher should avoid those missing values (for example;- by preparing online surveying instruments with field validation).

Even if, this thesis has investigated and examined the variables those influencing strategic alignment, further studies may explore and examine ways to facilitate such variables which presented in the literature. Business strategy and IT strategy were tested empirically, both were affected the strategic alignment positively and significantly. Whereas, other variables of the SAM were not included (internal variables). So future work should examine by including infrastructures domains (both business and IT infrastructures).

The research data was collected by physical survey, it was difficult to validate the response of respondents. Do to that, there is some missing values on the research data. The future researcher can omit those kinds of missing values by using online survey method. And Amharic questionnaire is good for employees/respondents for clear response, because most activities are performed in local language.

Further study could be to replicate this paper in diverse contexts of different organizations to see whether the elements identified have an impact on organization performance. Organizations have a different organizational demography and IT strategies. So the research hypothesis should tested in the rest multiple public organizations organization in Ethiopia. This research is scoped in Addis Ababa, the future research can apply same methodology in reginal or local governmental offices.

And finally, it will better to see how the above points are affect the strategic alignment and joint impact on organizational performance. Creating a common insight regarding to strategies (both IT and business strategies) by the employees of the organizations.

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APENDIXES

Annex A: Interview

Semi-structured interview objectives notification to participants, this interview has been designed to gather data for the fulfillment of the thesis requirement for the Degree of Master of Science in Information Science (information systems). Thank you for participating in the interview on "the Assessment of Business-IT Strategy Alignment Field Study".

The report of this study's findings will be handed to each individual that participate in the interview. This is to justify the transparency for each interviewee.

Participation in this study is voluntary. You may decline any interview questions that you do not wish to answer. There are no known or anticipated risks from participating in this study. Because of the potentially sensitive nature of the study, every effort has been made to protect your anonymity. The data collected from the survey will be maintained on the researcher's computer and the replied interview will be properly locked. The data will never be shared with others without your prior consent. If you require further information on this study, or have any questions or suggestions, please contact me (Ashenafi Mulugeta) directly at gorightone1@gmail.com or 0941135181.

Interview question and answer from ERCA, MIS higher level staffs about business and IT strategies, the following structured and Semi-structured interview questions and answers.

Interviewer: Hello mister

Interviewee: Hello, peace

Interviewer: Fine, my first question is: from your knowledge or experiences what is organizational strategy? It may new for us, tell me in general from your level of experience?

Interviewee: In my view organizational strategy means contain the two things, the organization and strategy. Strategy means just like a road map and it show about where I started and ended. In my understanding, for example as an IT sector, we have IT strategy which is derived from business strategy but nobody can have a power to run out (changing) the strategy out of the business strategy frame. So the IT strategy should align with business strategy because the center IT strategy is part of a business for the organization. The business of our organization is collecting income, collection this income means how to collect by considering the customers satisfaction, identifying obstacles and defining mitigation plan. The primary business of our organization is collecting income. The income collection procedures should be by considering the customers satisfaction and define mitigation plan for obstacles (undefined risks. The government

has a holistic strategy as a country level and we are proposing a specific business strategy as a company. So our organization receives a general direction from central government of the country, as a business strategy. For example the 10 year strategy of prosperity's. Because strategy must come from top to down and also goes from bottom to up by considering the authority of country's government. When we come in our organization there is a sector named as the prosperity's plan (10 year plan) only on income sector. Income sector contains a ministry of revenue. The ministry of revenue also contains responsible institutions such as customs, national lottery. Our IT department (enablers) develops 5 year's IT strategy (roadmap) by referring the organization's 10 year business strategy. Based on the roadmap, vision and missions of the organization we develop five year's IT strategy to support the organization through technology.

Our IT department develops 5 year's IT strategy by referring the organization's 10 year business strategy. The ERCA MIS department develops the 5 year's IT strategy based on the roadmap, vision and missions of the organization.

Interviewer: I thanks, the second and third question answered on your explanation, we go to the fourth question

Interviewee: Yeah!

Interviewer: Is your organizations encouraged IT departments to develop IT strategy?

Interviewee: Of course of course. Look: the IT strategy should not be nominal and random, first we must done diagnostic. For example: what is the current problem on the IT. IT diagnostic includes three things such as the people (professionals), the process and the existing technology we are using right now. So the role of strategy depends on how to overcome the issues on the above three points. Our day to day's activity should have easy by using technology (we are not unique things or islands) we have to compute by opening the gates for technology usage rather than closing of the technology gates). The technology should cover local and international item transactions. While the process should be short, attractive and user-friendly. So our strategy mostly formulated based on the encouragement of diagnostics. We are working to execute the strategy, even the complaints are needed, now customers can pay their revenue; see report and other activities digitally except special cases may occur on customer's (e.g auditing change). It is due to technology or a result of strategy.

Interviewer: Becoming activities are done digitally.

Interviewee: Yes.

Interviewer: very good! Also the fifth question has a relationship with previous and we are discussed the organization has an IT and Business strategies. The question is how much the strategies are aligned? (Please add example)

Interviewee: Yes, because the organization's IT department is not doing everything alone, as I told you we are enablers and we enable the business. Each business have their own customers (taxpayer), to identify their taxpayers should be supported by technology. Assume, a tax center may say I have 1000 taxpayers, must get the number of taxpayers automatically not finding manual file system. It should be by clicking some icon and knows the customers profile such as: who are, how many and transaction information will be displayed by different formats (eg list of payed, unpaid customers). We are using a system called SIGTAS, we are using and it has been in service for fifteen years and it is almost outdated in technology and by its functionalities. SIGTAS was help controlling the queuing but it is not enough, then we are dealing to start e-tax system that includes e-tax and e-filing components (we give an access 24, 25/7 to filing their transaction periodically) and the recorded files will be integrated with e-payment system. Remember, no physical contact to filing between taxpayers and our system (everything is done through system). But e-payment will be done by collaborating different systems and stockholders such as banks, taxpayers, ERCA, Derash (system developed by INSA used as a bridge between us and other systems. Everything is done digitally; we have no physical interaction with customers, except special cases. So there is an alignment, even we (IMS department) saying we are service providers for our organization (branches), like ETC provides a service through ought the country. So there is an alignment between our systems.

Interviewer: Okay, more of the sixth question is answered previous, and to add further explanation

Interviewee: Good!

Interviewer: The strategic alignment between business and IT is how much influence the organizational performance? For example: - after and before e-tax? Could you tell me the practical change?

Interviewee: For frankly speaking the performance is good mainly when we see the increment but on the acceleration is sometime limited by deferment factors such as telecom infrastructure, topography, cost and uncertain problems. Nowadays telecom's is develops a new strategies such as, cost reduction and giving other benefits (advantages) and it also initiates ours customers become eager or aware. We have link with ETC, we are working with ETC by collaboration and we have a sort of discussions for changes frequently and exchange reports with a time frame. But some time there is unexpected problems on telecom infrastructure such as cutting fiber cables

intentionally or unintentionally. But if the telecom infrastructure is well, clients are will motivated with our service specially the customers who have a potential to get ETC infrastructure.

We are standing to develop ITAS rather STAS and we will finish in these two years, now we implemented ITAS with four branches in Addis Ababa and we had seen a good feedback. Also we are escalating the system by revising practices and these tasks become well input of our strategy development.

Interviewer: I thank you. By the way the question is inherent from previous. Just in order to add some practical example on: innovation, security, efficiency, change management and so like?

Interviewee: Just as I told you, technology by default it is a new thing, innovation. We are developing ITAS from old system STAS. So there is some changes, innovations and it includes or integrates multiple systems not only filing, payment but also includes requesting clearance , requesting refund , requesting report and anything on our transaction performed on this portal. So there is a good invention because of strategy and makes simple the task of management (managements can see the summarized reports rather than sorts of calculations). There is efficiency because the system reduces the hassle works. The system also creates a readiness to identify the gaps and predict the future activities kike deliverable the systems notify or aware customers through text message. But security is the serious case we have to concern by country level, not by specific organization. Because each activity we are doing online is on cloud. Obviously even now ours conversation is expected it is on the air and we exposed for security. We can say ours poverty protect us from cyber security, but our IT become grow the security will be questionable. We have to secure our system end to end, otherwise the transaction will damaged with unauthorized body. Now we are developing security policy strategy document to enhance the security of the organization. And also we are under process to forming security department as a center level from directorate level.

Interviewer: I very thank you.

Interviewee: Thanks

Interviewer: Two things for the last, staffs (either business or IT from each branches) how much they are conscious about strategy? And after the implemented new system, did you get any comment, testimony or satisfaction from your customers?

Interviewee: First, we have multiple branches and we give training and meetings for employees. If there is any change in organizational system, immediately training and trainee of trainers will

reachable with each branch and as well as we display the changes on our website both for internal and external users.

When we come to satisfaction, it is unlimited by its nature and it is difficult to say 100% our customers are satisfied. But first we discuss with internal users timely about issues and us making modifications, then we see the feedback of our customers (the feedback may about time, performance,).

Now, we have two systems ITAS (new/ under deployment) and STAS (old of still work until the new system is fully implemented). So when we see the customers comment, customers are more satisfied by online (ITAS) system rather SITAS (old). Especially large taxpayers are fully using ITAS and they are filing, pay and reporting online. We have to focus on the big fish. For the sake of reducing workload and easy of management, small taxpayers are simply treated by the bank to bank system (depositing and bring receipt). So we are doing to manage small taxpayers through bank to bank system but we are doing fully focus on for repetitive and large taxpayer.

Interviewer: I thank you so much!

Interviewee: Thanks!

Interviewer: I thank you, God bless you.

Interviewee: Thanks! Smiled!

Annex B: Survey (Instrument)

Introduction to the survey

This survey questionnaire is adopted from public organizations study at Brunel University London by the authors Mohamed & Khalifa(Mohamed & Khalifa, 2016). The survey contents are used by multiple researchers both for qualitative and quantitative methods, in different concept and in different research area (topic), the searchers those were using the following measures of alignment such as:(J. Luftman & Luftman, 2000), (Helaly, 2012), (Anjou, 2016), (J. Luftman et al., 2017), (Solomon, 2018), (Boasberg et al., 2019).

The strategic alignment of business strategies and information technology strategies has become very important for organizations. This thesis aims to measure the level of both business and IT strategic alignment and the factors affecting the alignment (fit) between the needs (business and IT).

Dears, your full participation is crucial for the validity of the results and your response will reduce the percentage of errors related to the survey. Individuals will not be identified by name in

any analyses or reports pertaining to the study. The survey (questionnaire instrument) includes four (4) sections as follow:

Section A: General Information

1. **To which of the following <u>organizational units</u> you are working in?**
   - ✓ IT
   - ✓ Management/ Core Business/ Planning
   - ✓ Both
2. **Your <u>job</u> title** _____
3. **Your <u>education</u> level? Please tick (✓) on the box**

   Diploma ☐ Bachelor Degree ☐ Master ☐ PHD ☐ Other _____
4. **Your years of <u>experience</u>**

   Less than 3 years ☐ 3 to 5 years ☐ 5 to 10 years ☐ More than 10 years ☐
5. **The <u>Services</u> providing for public from your organization? (Please select one or more from the following)**
   - ☐ Medical services
   - ☐ Educational services
   - ☐ Legal services (Authorization, Permission, etc...)
   - ☐ Financial
   - ☐ Telecom
   - ☐ Municipal service
   - ☐ Others _____
6. **Do you know your organization business and IT <u>strategy</u>?**
   - ☐ Yes, I know the company business strategy
   - ☐ Yes, I know the company IT strategy
   - ☐ I know both business and IT strategies of the company
   - ☐ No I did not know about business and IT strategies of the company
7. **Do you know the <u>vision and missions</u> of your organization?**
   - ☐ Yes I know
   - ☐ No I didn't know
   - ☐ The organization does not have vision and mission

Section B: The status of Business and IT strategies in the organization

This section seeks to assess the extent or status of business and IT strategies in public organizations. Please response by indicating the extent to which each statement is applicable in your organization. **Where** 1= Very low, 5= Very High. (1, 2, 3, 4, 5 =Least, Less, Medium, More, Most)

Business Strategy	**Status of strategies**				
8. Business Drives Change	1	2	3	4	5
BSBDC1. The Business strategy lead the overall changes in the organization					
BSBDC2 Your organization motivates IT department to developing an IT strategy.					
9. Business Scope	1	2	3	4	5
BsBS1. The organization's business strategies affect every business activities and progress (e.g. service, product, customers...)					
BSBS2. Your organization works on quality product and service delivery throughout the country.					
10. Business Competencies	1	2	3	4	5
BSBC1. Business strategy plays as comparative advantage over its competitors(E.g.;- cost structure, service quality, research, product development, multimedia and channels, …					
BSBC2. The organization strategy navigates past experiences and future to achieve organization goal. e.g. organizational SWOT and PESTLE analysis					
11. Business Governance	1	2	3	4	5
BSBG1. The organization has a wide framework used to run and control the business process. E.g. plan for business regulations and monitoring mechanisms to achieving long term business values.					
BSBG2. The organization has external business relationship via executive board of directors. E.g. strategic alliances, joint ventures, and technology licensing					

IT Strategy	Status of strategies				
12. IT strategies support the business	1	2	3	4	5
ITSSB1. Your organization has formed IT department as a part of working unit (like as: finance, HR and other department)					
ITSSB2. The IT department developing IT strategies to support the goal of the organization.					
13. IT Scope	1	2	3	4	5
ITS1. The organization has using an IT applications such as:- audio, video, text processing and database					
ITS1. The organization has using technologies such as: networks (intranet, internet) and robotics for a new business opportunities					
14. IT Competencies	1	2	3	4	5
ITC1. IT strategy highly supports the business strategy. E.g. to improve product quality and attract more customers					
ITC2. The organization has using enterprise wide systems such as:- SAP, ERP, CSM, etc.					
15. IT Governance	1	2	3	4	5
ITG1. The organization has a number of IT management activities for the executive management assigning IT roles and responsibilities, defining constraints within which IT operates, measuring performance, managing risk and obtaining assurance.					
ITG2. The organization has proceed doing the external relationships (such as, outsourcing alliances, joint research and development)					
ITG3. The IT directorate has using a frameworks like: - COBIT and ITIL for a holistic management of IT governance processes in the organization.					

Section C -The status of IT and business strategical alliance (integration)

This section seeks to measure the alliance of IT strategies and business strategies in your organization. Please select the level that best evaluate the situation in your organization by using a 1 to 5 Likert scale, Where 1= Very low, 5= Very High. (**1, 2, 3, 4, 5 =Least, Less, Medium, More, Most**)

Strategic Alignment	**Level of Alignment**				
16. Communication	**1**	**2**	**3**	**4**	**5**
SA_C1. An IT understands (to what extent?) the organization's business environment(e.g., its customers, competitors, processes, partners/alliances)					
SAC2. Business professionals or staffs clearly understand the IT environment (e.g., its current and potential capabilities, systems, services, processes)					
SAC3. The IT and business communication style is informal and flexible					
17. Competency	1	2	3	4	5
SACOMP1. We routinely assess and/or review IT investments and have a formal process in place to make changes based on the results and measure					
SACOMP2. We have well established IT-Business continuous improvement practices and effectiveness measures in place					
SACOMP3. The demonstrated contribution that the IT function has made to the accomplishment of the organization's strategic goals is very strong					
18. Governance	1	2	3	4	5
SAG1. We do formal strategic business planning at the functional unit, across the enterprise, and with our business partners/alliances with IT participation.					
SAG2. We do formal strategic IT planning at the functional unit, across the enterprise, and with our business partners/alliances.					
SAG3. The ability of the IT function to react/respond quickly to the organization's changing business needs is very strong					
19. Partnership	1	2	3	4	5
SAP1. IT is perceived by the business as a partner with the business that co-adapts/improvises in bringing value to the firm					
SAP2. The role of IT in strategic business planning is co-adaptive to enable/drive strategic objectives					
SAP3. We have defined programs to manage our relationships and both IT and the business comply with them, and we are continuously improving them.					
20. Scope and Architecture	1	2	3	4	5
SASA1. Our primary systems are business strategy enablers/drivers (IT is a catalyst for changes in the business strategy)					
SASA2. Our IT standards are defined and enforced across functional units, and with joint coordination among our strategic business partners/alliances					
SASA3. Most of the time, a business or IT change is transparent across the organization and to our business partners/alliances					
21. Skills	1	2	3	4	5
SAS1. Innovation is strongly encouraged at the functional unit, corporate level, and with business partners/alliances					
SAS2. Change readiness programs are in place at the corporate level and we are					

proactive and anticipate change.						
SAS3. Effective programs are in place to attract and retain the best IT professionals with both technical and business skills						

Section D- Organizational Performance

This section seeks to assess the organizational performance of your organization. Please response by indicating the extent to which you agree or disagree with each statement. Where (**1, 2, 3, 4, 5** =**Least, Less, Medium, More, Most**)

22. Organizational Performance: Strategies that are **currently** adopted in your organization have assisted in:		1	2	3	4	5
Stakeholder Satisfaction	OPSS1. Delivery of services meet customers' needs					
	OPSS2. New Services Development					
	OPSS3. Improve the outcomes/ outputs					
Process	OPP1. Increase responsiveness to clients requirements					
	OPP2. Enhancement in business processes					
	OPP3. Attain timely decision making					
	OPP4. Increase in the cooperation between departments					
Capabilities	OPC1. Increase in innovation capabilities					
	OPC2. Development of effective training programs					
	OPC3. Increase the organizational capacity					
	OPC4. Performance evaluation (your organization evaluate an activities based on the plan and by using the technique like **BSC**(balanced score card))					