
# ST. MARY'S UNIVERSITY COLLEGE
# SCHOOL OF GRADUATE STUDIES

## IMPLEMENTATION OF ENTERPRISE RESOURCE PLANNING - IT'S CHALLENGES: THE CASE OF AWASH INSURANCE COMPANY.

**BY**
**DEME BIREHANU**

**December, 2019**

**ADDIS ABABA, ETHIOPIA**

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**A THESIS SUBMITTED TO ST.MARY'S UNIVERSITY, SCHOOL OF GRADUATE STUDIES IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF ARTS DEGREE IN PROJECT MANAGEMENT**

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**ST. MARY'S UNIVERSITY**
**SCHOOL OF GRADUATE STUDIES**
**SCHOOL OF BUSINESS**

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**APPROVED BY BOARD OF EXAMINERS**

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## DECLARATION

I, the undersigned, declare that this thesis is my original work, prepared under the guidance of Tiruneh Legesse (Assistant Professor). All sources of material used for the thesis have been duly acknowledged. I further confirm that the thesis has not been submitted either in part or in full to any other higher learning institutions for the purpose of earning any degree.

_____ _____

Deme Birehanu

Signature

**St. Mary's University, Addis Ababa** **December, 2019**

## ENDORSEMENT

This thesis has been submitted to St. Mary's University, School of Graduate Studies for examination with my approval as a university advisor.

Tiruneh Legesse (Assistant Professor). _____

Name Signature and Date

**St. Mary's University, Addis Ababa** **December, 2019**

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With God we can!!

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# List of Acronyms

**ERP-Enterprise Resource Planning**

**AIC- Awash Insurance Company**

**MRP-Material Requirements Planning**

**S.C- Share Company**

**SPM -Strategic Planning Management**

**MRP -Manufacturing Resource Planning**

**HR- Human Resource**

**IT-Information technology**

**CSF- Critical success factor**

**MRP-Material Requirements Planning**

**CRM -customer relationship management**

**BI-Business intelligence**

**SCM-Supply Chain Management**

**KSFs-key success factors**

**TMS-Top management support**

**OCM-Organizational Change Management**

**BPR-Business process reengineering**

**CI-Consultant involvement**

**CEO - Chief Executive Officer**

**DCEO - Deputy Chief Executive Officer**

**MIS -Management Information System**

# ABSTRACT

*Enterprise Resource Planning (ERP) systems have been covered in both mainstream Information Technology (IT) periodicals, and in academic literature, as a result of extensive adoption by organizations in the last two decades. ERP systems are enterprise-wide application packages that are designed to provide information systems integrated support to various business functions. Though ERP has numerous benefits to the organization, its implementation involves amendments in business process and software configuration for better compatibility. ERP systems continue to evolve and being implemented by relatively smaller and regional companies. This research has carried out a descriptive study into the implementation of ERP; its Challenges, within Awash Insurance Company. The evaluation was based on the six Critical Success Factors which are top management support, project team competency, user training and human capability, interdepartmental communication, decision making and IT Infrastructure which cited as index for success of ERP implementation in others researches The study found that CSFs has influenced ERP implementation at AIC. That indicates AIC has implemented the ERP system successfully and smoothly. Besides, studying ERP implementation in developing countries like Ethiopia, which has not had noticeable experience in this regard, would be appealing for developers, vendors, consultants and ERP user companies. ERP systems make up a major investment and undertaking by most companies. Therefore, research and lessons learned in this area are very important. In addition to a significant initial literature review, this research has assessed matters regarding ERP As a result; this study will contribute relevant information to the literature on business information systems and to ERP systems in the insurance industry in particular. In addition the research also recommended further research gaps in regards of Software selection and Company performance.*

***Key Words**: Critical Success Factor, ERP, AIC*

# CHAPTER ONE

# INTRODUCTION

## 1.1Background of the Study

ERP has attracted phenomenal interest in the recent years. Actually, an ERP System is considered as a backbone of most organizations across all the industries. It will usually cover all business functions on all management levels, supporting most or all functional areas in the daily operations of the enterprise, and it is considered as a source of competitive advantage for some organizations, if the system is set up at the right way. However, the chance of failure has always been high. Today, many companies fail to realize the full benefits of ERP systems due to their negligence of some aspects of management and implementation. Finally, the result is either the improvement of the performance or on the contrary a slowdown because of its powerful concept. (Mahraz, 2018)

The Enterprise Resource Planning(ERP) system is a software solution that has been conceived to unify all information systems of all departments into a single integrated system that manages all of functional areas in a company such as financial and cost accounting, planning and manufacturing, sales and marketing, materials management, human resource management, distribution and transportation. It is considered as a backbone of the information systems in an enterprise, and it supports all parts of business processes by providing flow of information between all business functions on all levels within an enterprise. ERP system offers a competitive advantage especially in terms on the value of the information. (Davenport, 2000).

Information systems have become an integral part of every corporate organization, especially the insurance industry, in facilitating decision-making, planning process and the prospect of achieving organizational goals and objectives. The enormous numbers of employees engaged in the insurance sector coupled with numerous tasks made decision making difficult work flow and dissemination of information by the management time consuming thereby leading to inefficiency. In order to tackle this challenge it becomes imperative to introduce Enterprise Resource Planning into the management of the organization so as to facilitate decision-making and work flow. (Alter 1978).

This study uses responses from senior middle and supervisory management staff of Awash Insurance Company to examine the Challenges of ERP as used by the management for smooth and swift work flow and decision-making, speed, availability of information and involvement of subordinates in decision-making and swift work flow. Simple percentage were used to analyze the data. However, it's expected that the study will clearly indicated Enterprise Resource Planning (ERP) integrates all departments and functions across a business into a single system while still serving each department's specific needs and also design to help companies make smarter decisions, serve their customers better and work more efficiently overall by automating processes and workflows. Those information systems would expunge traditional, geographical and marketing limitations; Increase effective communication between departments, allow employees to access information they need from anywhere, Streamline processes across various department, Provide a bird's eye view of a business' overall operations, Better manage a company's finances hence the management of every organization is expected to embracing information systems and specifically ERP. (Baumann, 2018)

## 1.2 Background of the Organization

Awash Insurance Company S.C. (AIC) founded on 1st, October, 1994 and commenced operation on January 2, 1995 in Addis Ababa, Ethiopia. Awash Insurance Company S.C. (AIC) is the first pioneer private insurance companies in Ethiopia launched following the liberalization of the financial sector. Founded on a solid base and uniquely on a cross-sectional composition, AIC is progressing in renewing its commitment to excellence. AIC has been in the industry for the past 24 years, which made the company the first private insurance company in the country. This alone has put the company in the leading profitable position for the past six consecutive years and hasn't registered loss from the date it started operation. Owns ultra modern Headquarters building at the center of the metropolis. Always working for the maximum satisfaction of the customers who rely on them and who have put their confidence in the Company.

The Mission of Awash Insurance Company S.C. is "to provide diversified general and long-term insurance services to a continuously growing number of clients efficiently, competitively and profitably supported by modern technology as well as by well trained, professionally and socially responsible team of management and employees." The company in its 24 years of service has never registered a loss and has been the leading profitable private insurance Company for the past six consecutive years.

In light of the above background realities against the changing international and national economic environment and in order to excel over the coming years, AIC examined the internal and external environment and prepared its third strategic planning management (SPM) document that draws the path of the company for the next five years. The main Strategic issues of AIC SPM document incorporate Human resource development, Organizational Structure and management system; customer focused marketing strategy & Business development, MIS, Underwriting and Risk Management, Claims Management and Financial Management. (AIC SPM, page 43)

From the AIC's SPM document one of the main action plan topic is ERP, to which the company already launched parallel run on April 2018. This paper aims to assess the implementation of ERP and its challenges. This was measured in different form of parameters.

## 1.3 Statement of the Problem

Technology is being used in almost every company to accomplish specific tasks. Technology has changed the way we work and do business and it has brought tremendous simplification at work, it reduces the human errors which can be caused by too much work or stress. Business technologies like computers tablets, social networks, and virtual meeting software, accounting software, customer management applications, and so much more have removed workplace boundaries and they have also facilitated in the movement of information at the workplace which accelerates quick decision making at your workplace. Not having access to such technology could mean disaster in today's business market in regards to wastage of time, resources and information, poor internal control, inaccuracy of work quality, delay, poor decision making and low service delivery time.

Today's business operates in a rival and competitive environment. The exponential growth and advancement in IT (information technology) is a significant factor that influence today's business environment. This of course, has made a rival competition among organizations. Therefore, if organizations wish to remain successful and to be competitive, managers need to employ technologies for the benefit of their organizations. This in turn helps organizations improve information flow, reduce costs and streamline business, offer product variety, establish linkage with suppliers and reduce response time to customer needs and expectations, (Vonderembse &Nathan,; Alavi & Leidner, 2001).

Organizations may be composed of different dispersed units that require integration. Therefore, managers can focus on ICT (information and communication technologies) to integrate information and

communication across units of an organization. Currently, a popular approach to the development of an integrated enterprise-wide system is the implementation of an Enterprise Resource Planning (ERP) system, (Beheshti, 2006).

Many challenges are facing organizations; These challenges (such as ease in international trade barriers, economic liberalization, globalization and privatization) have made a heavy burden on organizations specifically in developing countries (which is the case of Jordan) to survive in such environment. This of course has increased the pressure on these organizations to come up with effective and competitive capabilities to survive and succeed. Enterprise Resource Planning (ERP) is often considered as one of the solutions for organizations to survive, (Rao,2000). ERP systems can successfully integrate the processes of each department, decrease costs, improve effectiveness, increase clients' level of satisfaction and immediately share information with the whole enterprise, (Davenport et al, 1998).

According to Awash Insurance Company annual report, during the period between 2014/15 and 2016/17 ($2^{nd}$ strategic plan of the company) the company lost a considerable amount of customer due to loss of In view of contact information and also due to the bulk paper work the company is facing problems in regards of information flow between departments to make a swift and educated decision which in turn reduce time and increase customer satisfaction. In view of this, the researcher attempt to establish what ERP connote and what its implementation in insurance industry mean in regard of challenges. The management is also becoming increasingly aware that ERP can be used to produce meaningful information on which they can base their decisions in addition to performing the detailed paper work functions of the organization, needless to say it also helps in time minimization, Improves Human Resource Management, Encourages Innovation and Creativity, Improves communication and Creates Mobility.

## 1.4 Research Questions

This research has tried to answer the following research questions articulated below:

1- To what extent did the ERP enhance interdepartmental communication of AIC?

2- To what extent does the top management supported the implementation Process?

3-Does ERP provide relevant and timely information for decision making?

4-Does the project team competency and Human capability affect the implementation process?

5-Does the ERP implementation reduced the operational resource and time of AIC?

6- Does the management provide the necessary infrastructures for the implementation?

## 1.4Objective of the Study

The Objectives of this research are as follows,

### 1.4.1General Objective

The general objective of the study is to investigate "Implementation of ERP; its Challenges in the case of Awash Insurance Company"

### 1.4.2 Specific Objectives.

Specific objective of the study:

1. To examine the extent of ERP on enhancement of information flow and communication between departments of Awash Insurance Company.
2. To investigate the resources and time saved due to the implementation of ERP in Awash Insurance Company.
3. To evaluate the accuracy of decision making due to the implementation of ERP in Awash Insurance Company.
4. To examine the effect project team competency and Human capability on ERP implementation in Awash insurance company.
5. To examine the effect of top management support on implementation of ERP in Awash Insurance Company.
6. To evaluate if the management provide the necessary ERP IT infrastructures in Awash Insurance Company.

## 1.5 Significance of the Study

The ERP system provides an electronic document instead of using the traditional method (paper document), which is not easy to retrieve information. Often the ERP implementation project is amongst the biggest projects that an organization may launch. As a result, the issues surrounding the implementation process have been one of the major concerns in industries. By identifying the critical success factors challenges of ERP implementation, the finding of this study will enable management of AIC to have an insight about the systems functionality by highlighting the gains achieved and the challenges faced. In addition, the recommendations of

this study will also be used as an input for the planned second phase ERP System implementation in AIC. Other insurance companies who have a plan to implement ERP system could also learn from the result of the study. Moreover, the study will play a significant role as a literature base on future researches of related topics.

## 1.6 Scope of the Study

The scope of this research is limited to conducting a single-case study to investigate the Implementation of ERP system and its Challenges in a service industry in the case of Awash Insurance Company. The study will cover ERP implementation in regards of its challenges in a selected Head quarter directorates and one Main branch entities which are located in Addis Ababa. Due to the dispersed branch locations across the country it's uneconomical and redundant to conduct the research on all branches. All the respondents are employees of the company which are currently working in different levels of hierarchy.

## 1.7 Limitations of the Study

The data were collected from the company employee and some respondent were not able to return a questionnaire in due time and it was a difficult to wait until all return as intended. Hence, these negatively affect the quality of subject study. It would have been more convenient if the study is made in all Branches of the company but due to cost and time constraints the research was limited to the head Quarter.

## 1.8 Organization of the Study

This research contains five chapters to cover the entire academic research requirement. Chapter one covers introduction and background about ERP and how it supports the company and highlights the system

limitation and system significant, in addition to research objective significance, scope, limitation and problem statement.

Chapter two highlights the literature review which is related to what the earlier researches have done in the aspects of ERP and related theoretical literatures. Chapter three highlights the research methodology and study design. This chapter covers the research methods that the researcher uses to collect data to review the influence of the system. Chapter four highlights the data analysis and interpretation. Chapter five covers the, finding, recommendation, and conclusion.

# CHAPTER TWO

# REVIEW OF RELATED LITERATURE

This Chapter was divided mainly in four sections; the first section dealt with the theoretical review and conceptual definitions which were given by different scholars over times. The second section present empirical studies which was written by different researcher. The chapter concludes with future trends and perspectives and conceptual framework.

## 2. 1 Theoretical Literature

### 2.1.1 Enterprise Resource Planning (ERP)

ERP has attracted phenomenal interest in the recent years. Actually, an ERP System is considered as a backbone of most organizations across all the industries. It will usually cover all business functions on all management levels, supporting most or all functional areas in the daily operations of the enterprise, and it is considered as a source of competitive advantage for some organizations, if the system is set up at the right way. However, the chance of failure has always been high. Today, many companies fail to realize the full benefits of ERP systems due to their negligence of some aspects of management and implementation. Finally, the result is either the improvement of the Performance or on the contrary a slowdown because of its powerful concept.

An ERP system enables an organization to integrate all the primary business processes in order to enhance efficiency and maintain a competitive position. (Tenkorang & Helo, 2011). However, without successful implementation of the system, the projected benefits of improved productivity and competitive advantage would not be forthcoming. The ERP system stands for Enterprise Resource Planning. Enterprise Resource Planning (ERP) is an enterprise-wide information system that integrates and holds all the business processes in the entire organization. (Tenkorang & Helo, 2011). ERP systems have become a vital tool for all the businesses in today's competitive business environment. The ERP system is an enterprise information system designed to integrate and enhance the business processes in an organization. The ERP system eases the smooth flow of communal information and practices across the entire organization. Furthermore, it improves the performance of the supply chain and reduces the cycle times. However, without top management support, having appropriate business plan and vision, re-engineering business process, effective project management, user involvement and education, organizations cannot hold the full benefits of such complex system and the risk of failure might be at a high level. (Tenkorang & Helo, 2011).

ERPs are considered complex and painful to implement mainly because they force an organization to change its way of working as well as they are considerable expense, with long return on investment value .Implementing an ERP system takes from one to five years. Due to those and other factors some organization found themselves in situation, where buying an ERP system cost them times cheaper than installing and maintaining it. Often those issues lead organizations to cancel or drop of the idea of implementing particular ERP.

### 2.1.2 ERP Definitions

ERP systems were named differently by different authors, some of them are enterprise systems, enterprise wide-systems, enterprise business-systems, integrated vendor software, and enterprise application systems, but however with no significantly different definitions,(Mashari et al., 2003). Rosemann (1999), defines ERP system as "customizable, standard application software which includes integrated business solutions for the core processes (e.g. production planning and control, warehouse management) and the main administrative functions (e.g., accounting, human resource management) of an enterprise. With a Slight difference, Gable (1998), however, defines it as a comprehensive package software solutions seek to integrate the complete range of a business processes and functions in order to present a holistic view of the business from a single information and IT architecture"

The Enterprise Resource Planning (ERP) system is a software solution that has been conceived to unify all information systems of all departments into a single integrated system that manages all of functional areas in a company such as financial and cost accounting, planning and manufacturing, sales and marketing, materials management, human resource management, distribution and transportation. It is considered as a backbone of the information systems in an enterprise, and it supports all parts of business processes by providing flow of information between all business functions on all levels within an enterprise. ERP system offers a competitive advantage especially in terms on the value of the information.

### 2.1.3 Historical Perspective

In order to understand the adoption of ERP systems, the history should be reviewed. ERP solutions date back to the 1960s when the early accounting and inventory systems were introduced. Monitoring operational expenses was the main competitive thrust in the 1960s, (Jacobs & Weston, 2007). Consequently, manufacturing plans became more product-centered based on high-level volume production, the

minimization of costs, and presuming solid financial requisites, (Jacobs & Weston, 2007). According to Motiwalla & Thompson (2008), Enterprise Resource Planning systems are early generation enterprise systems that target the integration of data and to provide support to the organizations main functions. The development of ER software from 1960's to current time has been affected by other major IT inventions, (Plex, 2015). The development seen from minicomputers to the cloud is helping the organizations to assemble their businesses.

Most small- and medium-sized enterprises use basic business software to manage their daily operations. Eventually, they consider changing to an ERP system. However, implementing ERP system successfully is costly and complex, and frequently shows high disappointment rates if the ERP system does not readily align with the company's business requirements or their social environment, (Masa'deh, & Tarhini, 2016).

ERP system needs to provide more adaptability to users and minimal effort in the future. Cloud computing can help organizations to implement and maintain ERP systems more easily. Cloud computing is a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services). (Mell & Grance, 2011). Cloud computing is seen as an evolutionary progression in computing during the last decade, (Marston, Li et al.,, 2011). As a result of cloud computing, managers can achieve greater productivity at less cost, bringing about genuine enhancements in assembling operations. ERP users have many different demands; some of those changes can be outsourced and done by cloud based service providers.

The business procedures and their data requirements as well as the use of cloud-based ERP systems have changed operational procedures. Moreover, implementing ERP systems is complex because expenses may be too high or the system may be met with potential disappointment. ERP systems help in bringing the changes in a business, according to every business needs. Additionally, ERP systems implementation is done on the basis of business procedures for SMEs and expansion plans. The standard method is to outsource the installation and configuration to other businesses, especially consultancy companies, (Pollock & Williams, 2008).

ERP systems implementation has focused on some of the major areas, for example, operational management, key performance indicators, and quality assurance. Most existing studies report just on the 'positive effects' (advantages) of ERP systems in one hierarchical level and frequently they have been

directed just inside small number of organizations. Moreover, Information Technology (IT) related papers in recent years have looked at the advantages and disadvantages of IT, from the perspective of how information is captured and used by those systems, (Sommerville, & Sriram, 2011).

Some security components are integrated into an ERP system to protect the system against security threats and attacks. In addition, there may be insider threats from dissatisfied internal users. An ERP system can improve accuracy, consistency and security of data. Restrictions to data can also be improved. ERP vendors are additionally moving with different sorts of data security tools. Compatibility Issues with ERP modules lead to issues in integration of modules. Companies associate different vendors to implement different ERP modules, based on their competency. It is very necessary that there is a way to handle compatibility issues. Even though the great recognition and acceptance of ERP Systems in organizations, some criticisms have been directed to these types of systems, whether from a technical standpoint or from a business perspective. Implementation of ERP systems is complex and very costly. ERP systems are sometimes seen as slow and inflexible. This may be one of the reasons for user dissatisfaction. Networks need to perform at a high capacity for applications to work effectively.

In 1960s Inventory Management and control is the combination of information technology and business processes of maintaining the appropriate level of stock in a warehouse. The activities of inventory management include identifying inventory requirements, setting targets, providing replenishment techniques and options, monitoring item usages,

- 1960s Inventory Control Packages
- 1970s Material Requirements Planning (MRP)
- 1980s Manufacturing Resources Planning (MRP II)
- 1990s Enterprise Resource Planning(ERP)

2000s Extended ERP reconciling the inventory balances, and reporting inventory status, (Okrent et al, 2004) cited in (Embong, 2008).

In the 1970s Material Requirement Planning (MRP) Materials Requirement Planning (MRP) Utilizes software applications for scheduling production processes. MRP generates schedules for the operations and raw material purchases based on the production requirements of finished goods, the structure of the production system, the current inventories levels and the lot sizing procedure for each operation. 1980s Manufacturing Requirements Planning or MRP utilizes software applications for coordinating

manufacturing processes, from product planning, parts purchasing, inventory control to product distribution. 1990s Enterprise Resource Planning or ERP uses multi-module application software for improving the performance of the internal business processes. ERP systems often integrate business activities across functional departments, from product planning, parts purchasing, inventory control, product distribution, fulfillment, to order tracking. ERP software systems may include application modules for supporting marketing, finance, accounting and human resources.

### 2.1.3.1Enterprise Resource Planning (ERP) In Ethiopia

ERP Systems have been successfully implemented in many enterprises in Ethiopia. After implementation, ERP Software provides tremendous benefits like quality improvements, optimum utilization of scarce resources and cost reduction in the organization. An ERP Suite plays a critical role in integrating and automating the business processes in an enterprise. ERP in Ethiopia has helped in exposing the Ethiopian enterprise to the best practices and processes adopted internationally and serve as a catalyst to enhance their productivity and efficiency as well. Increasingly Ethiopian enterprises are witnessing and realizing the tremendous benefits a versatile and powerful ERP System brings to an enterprise and the imperative need for them to start their own enterprise automation journey as well with the implementation of a suitable ERP Solution in their enterprise too, (Abiyot, & George 2012).

### 2.1.4 Components of ERP

**Human Resources**

Managing your employees should always be priority number one. Without them, you don't have a company. Your HR ERP component should be able to handle the full spectrum of employee management and take care of processes like on boarding, off boarding, benefits administration and timekeeping. Mashari et al. (2003).

**Customer Relationship Management**

Managing your customers and leads needs to be your second highest priority. Without them, your business can't survive, let alone grow. A customer relationship management (CRM) ERP component allows you to keep track of your entire customer and lead data within your ERP solution. The insights you can gain from a CRM help optimize your marketing and sales efforts. Mashari et al. (2003).

**Business Intelligence**

Business intelligence (BI) has quickly become a standard in ERP systems and it's easy to see why. The BI component of your ERP software collects and analyzes data, providing you with actionable insights related to your business processes. And as businesses start to lean more heavily on decisions backed by data, BI becomes indispensable.

The best BI ERP components deliver those insights in reports. A good reporting feature is very important in BI and enables you to make sense of the data analyzed. (Bhatti .T, 2002)

**Supply Chain Management**

Creating an effective supply chain is never easy, especially when you don't have the best tools to oversee your operation. Ensuring that your ERP has a Supply Chain Management (SCM) component is crucial to staying competitive in this arena. Your SCM should optimize both manufacturing and distribution processes and creates an overall more efficient supply chain. (Bhatti .T, 2002)

**Inventory Management System**

An inventory management component is one of the most collaborative ERP components. Inventory management works in tandem with the SCM component but also dips its toes in other processes, such as sales and warehousing. The main purposes of these components are to manage order fulfillment and the stocking functions in a warehouse. Mashari et al. (2003)

**Financial Management**

Last but not least, we come to the financial management component. Since every business process involves the flow of money, whether it's paying your employees or paying to ship goods, this component works with all of the other parts of your ERP system.

A financial management system stores and analyzes all of your financial data. This includes accounts payable, accounts receivable, costs and budgets. Analysis of your data can reveal trends in your spending, helping you better understand how your profit is calculated and where to reduce costs. You can also receive financial forecasts with data analysis, allowing you to increase profit in the future. Mashari et al. (2003).

### 2.1.5 Benefits of ERP in the Insurance Industry

The insurance industry in general is a paper heavy environment. Countless administration tasks, forms and contracts mean data accumulation can easily reach breaking point, fast. An ERP (Enterprise Resource Planning) system is a solution designed specifically for making these tasks (and many more) as efficient as possible. (Esteves, 1999)

**Compliance**

The insurance industry is one of the most heavily regulated industries in today's economy. When there are changes to legislation, organizations must be able to access their data and present to the relevant body as quickly and efficiently as possible. Being able to evidence this data ensures the business remains compliant. (Boersma, 2005)

**Data Analysis**

The ability to analyze and visualize data is a huge selling point for many companies in the industry. Being able to slice, dice and present data when needed, with visually stimulating dashboards, is a great advantage, especially when there is so much data at hand. (Boersma, 2005)

**Integration**

One of the most significant functional aspects of an ERP system is the ability to integrate data from several departments and bring it into one unified database. In the insurance industry this is especially important when tracking customer history, including past transactional details, personal data and legal agreements. (Boersma, 2005)

**Sales Tracking**

Profitability is the end goal and tracking all aspects of your sales process and activity and is incredibly important when it comes to providing insurance. Outbound and inbound sales calls, referrals, cross-sell quotes and internet leads are all the key sets of data you can record easily. Identifying and analyzing every touch point and result with a customer can help you make the best and most informed business decisions. (Boersma, 2005)

**Customer Service**

Insurance brands pride themselves on the high-quality service they deliver to their customers, and in such a competitive market it's easy to see why such a considerable emphasis is placed on this. Companies who specialize in expert star look to insurance agencies to provide the quality service expected, having an ERP system in place is the first step in ensuring this. By accessing important information about customers at the click of a button, insurers can provide an efficient service, encouraging brand loyalty and repeat business. (Boersma, 2005)

### 2.1.5.1 Insurance Industry fields that make use of Information Technology

The focus on the customer oriented business model will further drive Insurance companies in embracing the emerging technologies. Due to the data-intensive nature of the industry, primarily because it involves collection, processing and maintaining of information relating to insurance policies, IT will continue to act as a critical enabler. In the volatile insurance environment where insurers introduce recurrent changes in process model, product design, IT has helped to gain through web-based, online, front-ending improvements for efficient selling, analysis and decision making. Technology investments were crucial in the dynamic insurance environment not only to serve the competitive edge but also to maintain the regulatory obligations and hygiene required. Some of the uses are to generate new leads, to generate different policies, for research and design, to manage client information, Mailing Lists to Target New Clients and Social Media and Software Tools could be mentioned. (Wee, 2000)

### 2.1.5.2 Importance and Impact of ERP Systems on Industry and Organizations.

There are many benefits to having an ERP system within the organization. Information is readily available for the proper users, all data is kept in a central repository, data redundancy is minimized, and there is a greater understanding of the overall business picture.

ERP systems bring corporate business processes and data access together in an integrated way that significantly changes how they do business. Companies realize the business value of ERP systems with the ability to obtain business process integration. Business process integration allows processes within a company to be incorporated together in one centralized system. The value of encompassing process integration permits companies to gain efficiencies in overall and individual processes. (Fu,2007), Have researched multiple articles and developed a list of anticipated benefits of ERP systems. Some of the benefits are Improved security and availability, Increase in organizational flexibility, Cost reduction, Fast amortization of

investment, More efficient business processes, Higher quality of business processes, Improved integrality, Reduced complexity and better harmonization of IT infrastructure, better information transparency and quality, and Better and faster compliance with legal requirements and frameworks could be mentioned.

One future impact is the incorporation of cloud computing. Cloud computing is going to allow companies to free up resources, because the company will have a third party hosting the system and software needed to do business over the Internet. ERP systems could be included in this opportunity. More companies were served with this new capability. The company will not be required to manage the hardware and software used. Companies were all owed to pay as they use the service, instead of making a capital investment. Willcocks and Sykes (2000)

### 2.1.6 ERP Life-Cycle Stages

ERP life cycle consists of six stages namely Adoption Decision Evolution phase, Acquisition phase, Implementation phase, Use and maintenance phase, Evolution phase and Retirement phase.
(Esteves, 1999)

**Adoption Decision Phase**

In this phase, the need for ERP system is reviewed and decided while selecting an information system which best addresses the critical business challenges and improve the organizational strategy. It is in this stage that the system requirements, its goals and benefits are defined. Analysis of the impact of ERP adoption at a business and organizational level is done here. (Esteves, 1999)

**Acquisition Phase**

Acquisition phase is selection of ERP product system which best fits the requirements of the organization and minimizes customization needs. Consulting company is selected in this phase to help in the next phases of the ERP life-cycle. Issues of price, training and maintenance services are analyzed and a contractual agreement is defined here. Return on investment analysis of the selected product should also be done in acquisition phase. (Esteves, 1999)

**Implementation Phase**

In this phase, the acquired ERP system is customized, parameterized and adapted to the needs of the organization. This phase is usually done with the help of consultants and implementer partners who provide implementation methodologies, know-how and training. (Esteves, 1999)

**Use and Maintenance Phase**

This is the stage when the system must be used in a way that returns expected benefits and minimizes disruption. This is referred to as Establishment Period, the period after go live until the system gets stabilized. In addition, once a system is implemented it must be maintained to correct malfunctions and optimize its functionality. (Esteves, 1999)

**Evolution Phase**

Evolution phase is the integration of more capabilities to the ERP system and expanding it to incorporate new benefits and functionalities. (Esteves, 1999)

**Retirement Phase**

This phase is the time when decision is made to replace the ERP system with other information systems due to its inadequacy to the current needs of the organization or availability of new technologies. ERP systems can be complex and difficult to implement, but a structured and disciplined approach can greatly facilitate the implementation. (Esteves, 1999)

### 2.1.7 Advantages and Disadvantages of ERP

There are different initiatives and reasons for acquiring ERP systems.ERP systems have the advantage of all-in-one integration between all parts and processes of a company, and this in turn gives the possibility of proper control. They are used to control and reduce data redundancy and accuracy. Redundant tasks were removed and the efficiency of the company increases. In general, compared to the traditional functional IT systems, ERP systems provide different benefits to a company and these benefits can be viewed in different dimensions as operational, managerial, strategic, IT infrastructure and organizational. ERP System benefits in different dimensions. (Chung, 2007).

**Operational**: Operational benefits are Productivity improvement, Cost Reduction, Quality Improvement and Customer Satisfaction.

**Managerial**: Decision making, Resource Management, Strategic Business Growth, Business Cooperation and Business Leadership.

**IT Infrastructure**: Business Change Flexibility, IT Cost Reduction and Increased IT Capability

Organizational: Common Vision, Empowerment and Changing Work Patterns

The other advantage of ERP systems is that easier and timely reports functionality. Users can get self-services of data needs and access. They can run their own reports and have better access to their data and the ability to manipulate and report on this data.

**The Advantages of ERP Systems are summarized as below:**

ERP has the Advantage to integrate financial information of different sources such as revenues, sales and cost, to Standardize Human Resources information for simple tracking of employees time and benefits data, provide Human Resources information for simple tracking of employees time and benefits data and speed up operating processes, Reduce inventory and lower costs, enhance Integrated, on-line, secure, self-service processes for business, Eliminate costly mainframe / fragmented technologies and Empower and enable employees, partners, customers and suppliers.

In summary, ERP application can help organizations in various ways of business aspect. The common importance of ERP that can be conclude are it helps in reduction of organization's operating cost can be reduced, integrates all parts of an organization, increases the efficiency of operations as a result of the integration, integration on information systems which enables free flow connection of information across the organization and enables consolidation of different software within the organizations. (Zuckerman et al, 1999) as cited by (Embong, 2008), argued that Enterprise Resource Planning can streamline the business operations and play a role as a key of successful ingredient to gain competitive advantages within the organizations.

On the other hand, ERP systems have some drawbacks and limitations. These systems are usually complex. Regardless of their long-term benefits and reduced maintenance costs, initial one time implementation is expensive. And even if data accuracy and integration is achieved by ERP systems, it is hard to correct or amend data once it is maintained in the system as it will affect many modules and processes. While ERP systems have more efficient methods, freedom and self creativity practice with the system is minimal.

Since it is important to create a comparison between the advantages and disadvantages of ERP so that I can show the significant differences occurred before and after the implementation of the system.
Some of the disadvantages of ERP are time consuming, followed by expensive, conformity of the modules, and features and complexity.

**Time consuming**

ERP implementation is longer and can take from six months to several years to complete. The ERP software functions itself will usually be available in used approximately in every six month. Companies that install ERP do not have an easy time to gain the benefits of it. Companies usually will change their ways of business and the ways people do their job after implement the ERP system and this will take times. The

important thing is not to focus on how long it will take. It is effective to understand the potential benefits and how to use wisely the system in order to improve the business itself because ERP implementation will take almost between one to three years in average, (Embong, 2008).

**Expensive**

ERP are expensive to implements. The price includes with general information technology (IT) Infrastructure. Cost may be change from thousand dollars to millions and the business process reengineering cost in infrastructure may be extremely high and create result in budget overrun. It is included with the hidden cost of ERP implementation that usually a company will face in the following areas.

**A. Training**

Training fees for the workers are high because of difficulties of implementing complex as ERP.

**B. Integration and testing**

Hidden cost in ERP such as testing the links between ERP package and other corporate software Links.

**C. Data conversion**

Data conversion like moving the corporate information such as customers and supplier record, products design data, and etc. will costs money.

**D. Data analysis**

For an analysis purpose, the data from the ERP system must be combined with the data from external systems. This will charge as the cost of a data warehouse in the ERP budget.

**E. Consultants**

Consulting fees were charges and usually become higher if it involve outside consulting firm besides of own vendor's consultant.

- **Conformity of the modules**

The architecture and components of the selected system should conform to the business processes, culture and strategic goals of the organization. A one reason for ERP implementation to fail is the software itself does not fix the one of important business processes for a company.

- **Features and complexity**

According to (Boersma, 2005 cited in Embong, 2008), argued that ERP systems are not easy to be defined and are complex and dispersed within and between organizations because of its system modules and complexity of implementation. Each of the position involves in ERP system in organizations said that these system are elusive where the system itself are in constant instability.

Nowadays, some of the mid average companies having difficulty on the performance of ERP system due to

lack of effective evaluation features and models of the system ERP system may have too many features and modules so the user needs to consider carefully and implement the needful only.

#### 2.1.7.1 ERP Systems Functionality

As mentioned earlier ERP system categorize in 4 tiers depending on their complexity, features and functionality. In this section we will investigate some of the most used ERP systems. ERP systems provide role-based access to crucial data, applications, and analytical tools in the following areas, (SAP, 2011)

- **Financials** – Ensure compliance and predictability of business performance – so organization can gain a deeper financial insight across the enterprise and tighten control of finances. They automate financial and management accounting and financial supply chain management.
- **Human Capital Management –**Optimize human resource processes with a complete, integrated, and global human capital management solution. Organizations can maximize the potential of workforce, while supporting innovation, growth, and flexibility. They can automate talent management, core HR processes, and workforce deployment – enabling increased efficiency and better compliance with changing global and local regulations.
- **Operations**– Manage end-to-end procurement and logistics business processes for complete business cycles including Bill of Materials, Order Management, Rough Cut Capacity Planning, Material Requirements, Planning, Capacity Requirements Planning, Purchasing, Inventory Management, Shop Floor Control, Forecasting, Demand Management, Master Production Scheduling, Product Costing
- **Corporate Services** – Helps organizations manage their most cost-intensive corporate functions by supporting and streamlining administrative processes in the areas of real estate; enterprise assets; project portfolios; corporate travel; environment, health, and safety compliance; quality; and global trade services.
- **Others**- Depending on the ERP software, functionality goes into different modules. However common functionality is Product Configuration, Distribution Requirements Planning, Quality Assurance/Management, Customer Service Management, Flexible Report Writer, Multi-site and Multi-National, Sales and Operations Planning, Finite Scheduling, Maintenance Management, Warehouse Management, Transportation Management, Supply Chain Execution Management, Manufacturing Execution Systems, etc.

### 2.1.8 Critical Success Factors in ERP

The success of ERP implementation has variety of factors, that are considered to be critical and many researches are trying to list them. Mashari et al. (2003), suggests that "clear vision and business director is fundamental for the success of ERP system implementation".

According to Gupta (2000), the key to successful implementation of ERP are: commitment of top management, ties between project management and business units, assessment of hardware requirements, assessment of hardware requirements, step-by-step introduction, starting early planning on user training and support, streamlining decision making for swift implementation work, (Umbre et al. (2003)

Mabert et al. (2003) are summarizing CSFs from three case studies based on different organization implementing ERP systems. They found similarities between those organizations which implementation was successful because senior executives were very involved throughout the project, from the outset to completion, and also established clear priorities; a cross-functional ERP Steering Committee with executive leadership was established to oversee the project. The Steering Committee was empowered to make key decisions, both during the planning and implementing stages, the implementation team spent extra time up front to define in great detail exactly how the implementation would be carried out and also these companies laid out clear guidelines on performance measurements. Furthermore Modifications to the ERP system code were kept to a minimum and organizational change and training strategies were developed in advance and were continually updated during the implementation. Key technology issues, such as data integrity and technology infrastructure, were addressed early with only minor re-engineering efforts were carried out up front with Only minor re-engineering efforts were carried out up front and The implementation plan and subsequent progress was communicated regularly to employees, suppliers and customers, Willcocks and Sykes (2000)

#### 2.1.8.1CSF for ERP Systems Implementation

The Critical success factor for ERP implantation involve seven parameters which are; Top management support, Project management, Use of consultants, Business process reengineering
Top management support, Project team competence, Change management and Interdepartmental communication, (Bhatti , 2002).

**Top Management Support**

Top management support has been constantly recognized as the most vital and crucial success factor in ERP system implementation projects. Top management support in ERP implementation has two main facets:

A. Providing leadership and

B. Providing the necessary resources

To implement ERP system successfully, management should monitor the implementation progress and deliver clear direction of the project. They must be willing to allow for a mindset change by accepting that a lot of learning has to be done at all levels, together with themselves, (Bhatti T. , 2002). (Bradford, 2000).Stated that one organization characteristic, top management support, was contributory in explaining ERP implementation success. Top management must take a dynamic in leading the ERP implementation. The success of a main project like an ERP implementation totally depends on the strong, sustained commitment of top management. This obligation when transferred down through the organizational levels results in an overall organizational commitment, (Wee, 2000)

**Business Process Reengineering (BPR)**

Implementing an ERP system involves reengineering the existing business process to the greatest business process standard. (Bingi, 1999). ERP systems are constructed on best practices that are followed in the industry. According to (Umble, 2002), Automating existing redundant or non-value-added processes in the new system can cause an implementation to fail.

The combined environment of the new ERP system will require the organization to conduct business in a dissimilar way. The proper implementation of an ERP system should force key business processes to be reengineered and cause a consistent rearrangement in organizational control to tolerate the effectiveness of the reengineering efforts.

An ERP system will clearly change the normal style of operation within and between functions, but it will also change many social systems throughout the organization. When organization implements ERP A certain level of BPR should be involved, as the packaged software may be incompatible with the needs and business processes of the organization. In order to improve the functionality of the software in accordance with the needs of the organization, an organization should reengineer business processes to fit the software instead of trying to modify the software to fit the organization's current business processes (Ngai, 2008). To achieve the greatest welfares provided by an ERP system, it is authoritative that the business processes are aligned with

the ERP system. Both the reengineering literature and the ERP literature suggest that an ERP system alone cannot improve organizational performance unless an organization restructures its business processes, (Somers, 2001).

**User training on Software and Education**

User training on software should a company give an attention. But when this issue is ignored, mainly it does not have the largest quantifiable benefit for a company who implement ERP; expenses are greatly increased in the long run. By treating resource training with little respect and financial support, it is not hard to realize the reality of delay, confusion and financial ruin that may result. Some companies preserve on assigning a fixed cost or percentage to the training effort, regardless of need or variable conditions, (Gargeya, 2005). This mistake has surely been the cause of many failed implementation efforts. Fortunately, it has also been a source for others to learn from such experiences and avoid repeating the mistake, (Gargeya, 2005).

**Change Management**

Change management is another crucial and important critical success factor of ERP project implementation. To introduce ERP project in a company, change management is an important factor for successful implementation to structure the change management strategies and business process methodology to accomplish its goal. Change management is vital, starting at the project phase and continuing throughout the entire life cycle.

Enterprise wide culture and structure change should be managed, which include people; organization and culture change, (Rosario, 2000). Unpredictably, the most common failure factor reported was that of readiness for change. Implementing ERP system completely changes the culture of the organization. Many companies make simplicity assumption of how an implementation will affect the culture within the organization. All changes like cultural and perception change should be handled at most care. If people are not ready or willing to change, change simply will not occur. All managers must be charged with the responsibility of controlling worker anxiety and resistance to the ERP system, (Aladwani, 2001).

**ERP Consultants**

(Welti, 1999), argues that the success of a project depends on the capabilities of the consultants, because they have in-depth knowledge of the software. (Somers T.M., 2001), Point out that consultants should be involved in different stages of the ERP project implementation, Because of rapid growth within the ERP software market, there has been a shortage of competent consultants. Finding the right people and keeping them

through the implementation can be a major challenge. ERP implementation demands multiple skills – functional, technical, and interpersonal.

**Interdepartmental Communication**

Communication is like the engine for the company who implement ERP system that keeps everything working properly. Communication is as a key component across all factors of their

Project Implementation Profile and maintained that "communication is crucial within the project team, between the team and the rest of the organization, and with the client" Poor communication between reengineering team members and other organizational members was found to be a problem in business process reengineering implementations. Communication and cooperation should be of two kinds: inwards the project team and outwards to the whole organization. It is necessary to create an understanding and an approval of the implementation, (Kronbichler, 2009).

### 2.1.8.2 Implementation of ERP Systems

Implementation of ERP is very expensive and complex undertakings, but once it's successfully implemented, significant improvements can be achieved such as easier access to reliable information, elimination of redundant data and operations, reduction of cycle times, increased efficiency hence reducing costs. It is the largest single IT investment, impacts the greatest number of individuals, and is the broadest in scope and complexity, (Chang et al. 2008.).

The implementation of an ERP system differs from that of any traditional information system due to its integrated nature which causes dramatic changes on work flow, organizational structure and on the way people does their jobs, (Matendela and Ogao, 2013). Organization's people and processes must undergo significant change in response to the introduction and implementation of an ERP system. It have many issues that confront ERP implementation, and organizations continue to underestimate the complexity of implementing an ERP system throughout its life cycle, (Olson, Zhao 2007) (Thompson 2009). Thus, the issues surrounding the implementation process have been one of the major concerns in the domain of ERP and different kinds of research in relation with ERP implementation are observed from the literature. This section has been divided on sub-section addressing the issues of implementation steps, the business process alignment, change management, critical success factors and reasons of failures.

#### 2.1.8.3 Implementation Strategy

Strategy implementation of ERP is also defined as the manner in which an organization should develop, utilize, and amalgamate organizational structure, control systems, and culture to follow strategies that lead to competitive advantage and a better performance. There are many approaches an organization can take when it comes to ERP implementation but the most important thing is to choose the best strategy for their particular business. Khanna (2012), explains the relationship of ERP transition strategies between the three basic risks, people, process and technology and thus aid the ERP implementers to better recognize what type or combination of strategies will suit their system the best. Akbar et al. (2010), present a model for evaluation of ERP procurement scheme with centralization on realization of strategic plan and focusing on small and medium enterprises. IZouaghi (2016), provides a brief overview of the literature dealing with key success factors related to an ERP implementation project and then come out with a framework analyzing these KSFs depending on implementation strategies.

#### 2.1.8.4 Business Process Alignment

The Business Process Reengineering phase is recognized a crucial step of an ERP implementation, supposed to make possible the mapping between the company activity and the ERP standard processes. It is an approach consisting of computer modeling of the business processes of the company, in both their application and human aspect. The aim of this approach is to gain a better understanding of all the company's business processes, their progress and their interactions. Due to technological and behavioral changes mainly linked to the multiplication of informational exchanges and the massive use of management systems, companies today seek to rely on infrastructures combining business process Reengineering (BPR) and ERP.

Panayiotou et al. (2015), described and analyze the benefits of the application of a requirements engineering framework to assist (ERP development. This framework combines the technology
driven and the process-driven approaches for requirements analysis and implementation. Specific business process modeling methods enhance the framework and assist the formulation of the functional specifications of the ERP system and the management of requirements. Soffer (2005), proposed an iterative alignment process, which takes a requirement-driven approach. It benefits from reusing business process design without being restricted by predefined solutions and criteria. Subramoniam et al. (2009), showed some sample ERP installations to come out with various types of business BPR, ranging from smaller to bigger, practiced while implementing ERP.

### 2.1.8.5 Management and ERP Systems

The majority of articles in the literature evoke the structural changes that result from implementing ERP in the company, attempt to measure the impact of ERP on organizations, and some examine their functional impact more specifically by defining the mode of management that must be implemented.

HElnaby et al. (2012), examine whether the implementation of ERP impacts both business strategy and organizational capabilities which in turn enhance firm performance. Specifically, he investigates the mediating effect of business strategy and organizational capabilities on the relationship between ERP implementation and firm performance. Dantes and Hasibuan (2011), explore a strategically and tactical impact induced by the implementation of ERP and find out the correlation among ERP implementation success with the strategically and tactical impact.

**Change Management**

Organizational Change Management (OCM) is the structured approach to transitioning project stakeholders from their current state to a desired future state. OCM activities are designed to empower stakeholders to embrace organizational and process changes required by new ERP software. By identifying the human impacts of a change, the OCM team supports the project management team that is primarily focused on the technical side of implementation. This issue is among the topics most treated in the articles.

Altamony et al (2016),tried to explore the critical success factors in change management strategy in order to guarantee a successful implementation of an organization's Enterprise Resource Planning (ERP) system and present the three phases of successful change management strategy: preparing to change, implementation of change, and measuring the impact on user. AL-Ghamdi (2013), discusses the change management strategies and processes for the success of ERP system implementation and proposed a model. An Al-Nafjan et al. (2011) targeted to investigate and identify the reasons for resistance to diffusion and why individuals within an organization resist the changes, and also suggests strategies to minimize the resistance if not overcome completely. Bazhair (2015), investigates the effects of ERP change management and ERP perceived ease of use on ERP systems acceptance and its impact on the financial performance.

**ERP and Supply Chain Management**

The most efficient manufacturers are also those who know how to manage more configurations in their supply chain, this determines the degree of a company's ability to adapt quickly to new customer demands

and market opportunities, it can be a competitive advantage or a handicap. Today, the Enterprise Resource Planning (ERP) system is expected to be an integral component of supply chain management (SCM), and for that many research have been conducted to define the impact of ERP systems and benefit on the supply chain management.

Su and Yang (2010a), provide further insights into the adoption of ERP systems and the impacts on firm competence in SCM and propose a model featuring ERP benefits to firm competences in supply chain management, they also hypothesize that three constructs of ERP benefits positively impact firm competences in SCM. A Kashyap (2011), documents the effect of implementation of an ERP system within a firm and also its impact on supply chain system. Hong and Hyun-Gi (2012), find out how the Enterprise Resource Planning system's maturity affects on the implementation intension of Supply Chain Management system, for that the empirical research about influence of ERP system on SCM system was carried out. Almahamid et al. (2015), guide a research that aims to understand the impacts of Enterprise Resource Planning (ERP), e-business technologies, and organizational collaboration on supply chain agility.

## 2.2 Empirical Review

The purpose of the paper is to consolidate the critical success factors (CSFs) as published in Enterprise Resource Planning (ERP) implementation case studies. (Raafat, 2016). The authors perform the analysis and propose the final CSFs based on the reported ERP implementation process stages.

The paper follows eight category coding steps proposed by Carley, (1993) and utilizes only ERP implementation case studies to identify a distinct set of critical success factors. In this paper 37 case studies are used and provide a reasonable sample from different countries and contexts. The researcher followed two methodologies one for the literature review process and the other for the

Out of 64 reported CSFs that were extracted from the literature and subsequent detailed hjk \\nalysis and synthesis the authors found a total of 22 factors that are distinct. These factors which encompass change analysis and synthesis.

management are suggested with five ERP implementation stages. 48 The study commended use the 22 CSFs to develop a post implementation Valuation instrument with the appropriate scales to degree them – hence the Verification of these factors quantitatively. This article sheds light on the probable Division of factors related to each implementation stage

This article is a review of work published in various journals and special conferences on topic of Critical Success Factors (CSF) of Enterprise Resource Planning (ERP) system implementation between 1998 and 2007. The total of 524 articles was reviewed, which includes 32 CSF literatures. This Research intends to serve three goals. First, it is useful to the researchers who are interested in studying ERP CSF field. Second, it is advantageous resource to find ERP CSF research topics. (Huang, 2010).

Third, it serves as a broad bibliography of the ERP CSF articles published during this 10 years period. The literature is analyzed under two categories and time periods. The data collection phase of the literature review has involved an extensive search of many prominent MIS journals.

The researcher found some important findings. First, the trend of CSF article published during the last 10 years is not the same as ERP articles. When CSF publication reached its peak time in 1999 and 2006, ERP publication comparatively was at lower points. During 1999-2000, the number of CSF articles was become decrease while ERP articles increase dramatically. Contract to this, from 2004, ERP articles decreased gradually, whereas CSF articles increased again. This may reveal the fact of increased attention on ERP implementation critical success factor by academic world.

Second, the top 10 CSFs for 10 year period are: Top Manager Commitment; Teamwork and Composition; Education and Training; Project Management; Definition of Scope and Goals; Business Process Redesign; Change Management Program and Culture; Champion; Open and Honest Communication; and Choose the Right Vendor Right Package. However, the researcher also found that Open and honest communication and End user involvement play a vital role in ERP implementation.

Third, the researchers gave more attention to human factor than technical factors in ERP implementation more articles after 2003 put end-user's training or involvement as a CSF instead of technical skills or IT infrastructure. With the development of ERP software, it becomes more mature and needs less attention on technical parts.

The purpose of this study is to determine the benefits sought from implementing ERP; the extent to which critical factors were present during the ERP software implementation; the level of satisfaction with the performance of implemented modules among the project managers and team members; the perceptions of project managers and team members as to the benefits and concerns of implementing ERP, the extent to which selected decision-making processes used in the organization's decision to implement ERP; and the

number of modules purchased with the intent to implement versus those actually implemented. This knowledge will allow organization leaders to make more informed decisions when implementing ERP. (Joycelyn, 1997).

The population for this study consisted of those individuals who are a part of an implementation project team at a public or private sector organization in North America, which had implemented or will implement ERP software. The researcher randomly selected the participant for this study from a known list of SAP project managers. And the researcher took a sample of 100 private sector and 100 public sector organizations this study also the researcher raised 6 research question.The researcher use descriptive research methods to describe his data and The Statistical Package for the Social Sciences for Windows (SPSS) was used to analyze the data.

Data were collected via a survey designed by the researcher. The researcher created a survey instrument based on the benefits of implementing ERP and the critical factors affecting an ERP implementation and it was periodically reviewed by ERP professionals and modified based on their suggestions.

Descriptive statistics were used to describe respondent's level of satisfaction with the modules the researcher concluded that organizations are implementing ERP systems in both public- and private-sector organizations. It was also concluded that the benefit most often realized through ERP implementation was redesigned business processes.

In regard to critical factors present during ERP implementations, it was concluded that top management was kept well-informed of the implementation. Top management support was also present during many of the implementations of ERP systems. Although many project team members and project managers felt that their implementation was a success, it was also concluded that the project team members had a numerous of advice from their implementation experience in the areas of change management, cost management, consultants, project management, vendor issues, and training. A suggestion heard consistently was to make sure that there is top management support, employee buy-in, proper training, and trained consultants. So finally the researcher found those concluded factors are a best mechanism for both Public and private institution while they implementing ERP.

This study explored the major key success factors (KSFs) that will turn the implementation process to a success. The study utilized 60 responses from managers and executives of local Jordanian firms and the researcher used questionnaires for the data collection instrument; also the researcher Raised 2 critical questions for his study. (Abu-Shanab, 2015).

What are the major factors that define the success of ERP systems and how they are ranked by Jordanian firms and experts? The instrument used included some demographic data related to the respondent and the firm of respondents. The survey included 22 KSFs utilizing a 7 point scale. The scale included a statement that rates each factor as least important to the success of ERP implementation. This study explored different factors that will secure the success of ERP implementation. The researcher projected all factors in the literature and lists in a survey and distributed to executives and managers in the local Jordanian market and the results indicated an important role for top management support, user training on software, interdepartmental communication and cooperation, and project team competence. On the other hand, more controversial factors were listed at the bottom of the rank list as marginal influence on the ERP system implementation and they are: partnership with vendor, architecture choices and use of consultant. This study is the first in the Jordanian environment that utilizes a sample from the local market and addresses the perceptions of managers and executives. In this regard, a larger sample would increase the validity of this research and its findings. Also, more research in this area would enhance the instrument used and improve our understanding of the top factors influencing ERP success. Finally, results emphasize the important of top management support and involvement in the implementation process of this complex system. The study found that the top factors influencing ERP success are top management support, user training on software, interdepartmental communication and cooperation, and project team competence.

(Sabaawi, 2015), the purpose of this study is to describe critical success factors for ERP implementation. This study has been building by focusing on checklist and group of interviews to specific data collection form sample in Cihan University. The studies raised two main questions; 1. What are the critical factors for ERP implementation success in a Cihan university? And 2. What are the KCSFs (Key Critical Success Factors, most preferred CSFs) that should be taken into high priority for the successful ERP implementation in a Cihan university and how they are ranked by sample?

The researcher had set questionnaire which contained a total of 24 questions and categorized the questionnaire according to their functions and goals. The questionnaire also used for data collection contained scales to measure ERP success and the researcher used descriptive analysis for his analysis.

The researcher identified eight Critical Success Factors in relation to ERP implementation in high education sector at developing countries. Those are Project management, Technological infrastructure, Communication, Departments(Stakeholder) participation, Change Management, Business Plan and Vision, Commitment and support of top management, User Training and Human Capability out of this the most important success factors was ERP implementation success are Project management, Technological infrastructure and Commitment and support of top management. This study has contributed to academic research by producing the empirical evidence to support the theories of CSFs and ERP implementation success at higher education. Understanding these factors is critical for the progression of the field in both academia and practice, therefore, providing a strong foundation of CSFs for further research in ERP implementation is very essential. All of these eight aspects are important to be aware of and managed in order to ensure the success of ERP initiatives in developing countries.

The aim of the present study was to explore critical success factor (CSFs) in implementation, pre-implementation and post-implementation phases of ERP system. The study employed case study approach guidelines of (Yin, 2009). The case study approach is a famous qualitative research strategy for the in-depth analysis of a case. The researcher interviewed fifteen face to face interviews of end users and consultants have been conducted. Different semi-structured and sometimes unstructured questions asked to respondents. A convenience sampling technique used to dig out the realities after the in-depth analysis. ERP end users and some of the member of ERP consultant team participated for the interviews. From the study 20% from contractual consultant, 40% from middle level management, 20% from lower level management, and 20% from top level management are the respondents. (Ijaz, 2014).

The researcher analyzed his study by using in-depth analysis of the company where ERP system has been implemented.By Using “NVvio” 10 software and different technical mechanisms like coding & thematic analysis, word tag clouds, word tree and tree map.

The researcher identified Business Process Reengineering, change management, effective communication, effective training, infrastructure, inter-team cooperation leadership, management involvement, rewards and recognitions, standardized implementation sequence, team composition and top management commitment as

the CSFs during the phase of ERP system implementation. Different CSFs have been identified in post-implementation stage such as end user satisfaction, employee motivation, organizational productivity, software reliability, professional development services and support & maintenance. In Pre-implementation stage of ERP System study found different CSFs such as Clear objectives and scope, complete awareness, organizational analysis, right product selection, study of organizational culture and team composition.

The aim of this study is to identify the risks and controls used in ERP implementations with the researcher examine each of the above risks in more detail and specify controls that can be utilized by organizations to minimize that risk. (Grabski, 2011).

In this study the researcher use interviews, survey and archival data sources and the researcher conductd four interview sessions: (1) the Director of Financial Services and the Business Analyst; (2) the Systems Analyst and the Information Technology Services (ITS) manager; (3) the Consultant; and (4) the Internal Auditor.

Finally the researcher found that BPR; the project team members 'skills and knowledge; the consultant's involvement; post implementation review; internal auditor's involvement; formulation of the steering committee; managerial "people" skills; and training sessions were vital to minimize risks. The results of this research provide support for the proposition that the success of an ERP system implementation is dependent, in the first instance, on identifying the major business risks and the controls that need to be put in place to minimize those risks.

Objective to understand the ways in which organizations can minimize the business risks involved. The study was motivated by the significance, for both the research and practice communities, of understanding the risks and controls critical for the successful implementation of ERP systems.

based on a review of the ERP literature, the researcher list five major business risks associated with the implementation of ERP systems: the lack of alignment of the new information system and business processes; the possible loss of control due to decentralization of decision making; risks associated with project complexity; the potential lack of in house skills; and users' resistance.

### 2.3 Future Trends and Perspectives

Organizations are under constant pressure from customers, shareholders, and suppliers to continuously improve and make better products quickly and efficiently. Competing in a dynamic environment and meeting global challenges requires agility. Successful companies must be able to respond quickly and cost-effectively

to change. The change could be of any type; shift in customer demands and supply chain partners, modifications to a business model or business process, business expansion and the need for new initiatives like outsourcing, and regulatory pressures imposed by financial markets, industrial groups, and government bodies. Organizations need to convert their industries into responsive, demand-driven, profit making enterprises by optimizing their operations. Their competitive advantage and ultimate survival depend on the use of extended information system applications and/or technology.

## 2.4 Conceptual Framework

A conceptual framework is an analytical tool with many variations and contexts. It is used to make conceptual distinctions and organize ideas by using diagrams or charts and the like. Hence, the researcher tries to see the relationship between Independent variables (top management support, project team competency, User Training and Human Capability, interdepartmental communication, Decision Making, IT Infrastructure and Dependent variable (ERP implementation success). The researcher chose these variables due to the fact that previous researches which are discussed in the literature review section identified that these variables are the critical success factors that affect ERP implementation and the challenges moreover these variables are the ones that captures the essence of the study.

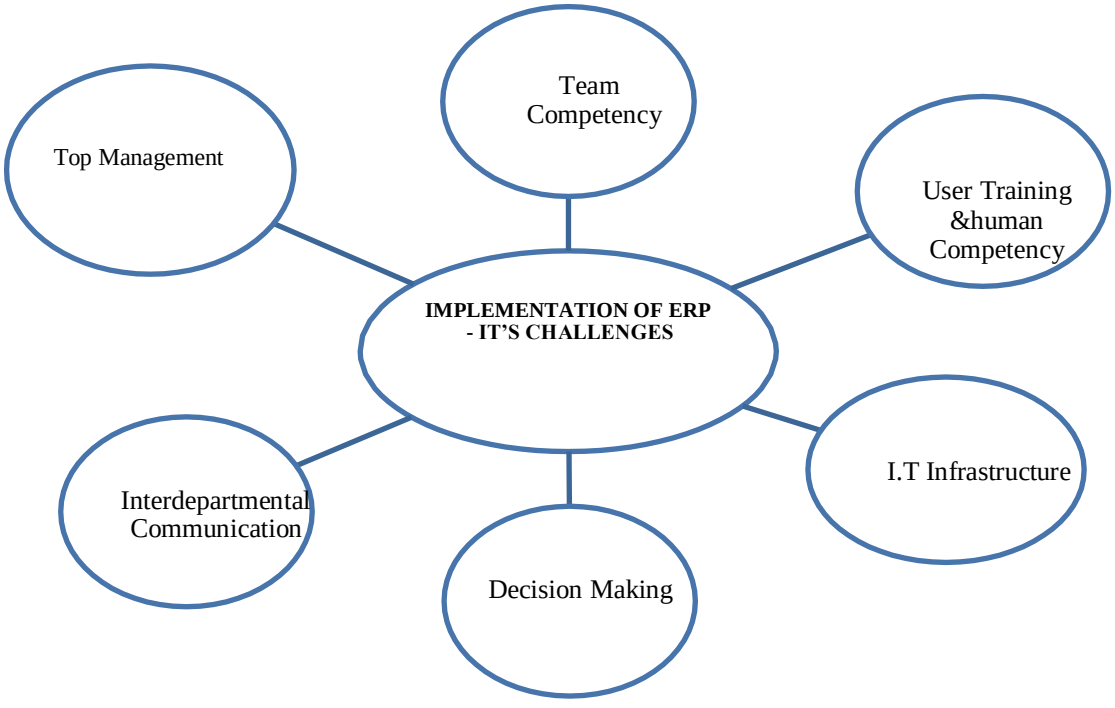


Figure 2.1: ***Source:*** *Developed based on the literature review conveyed*

# CHAPTER THREE

# RESEARCH METHODOLOGY

Research Methodology is a way to systematically solve the research problem. It may be understood as a science of studying how research is done scientifically (Kothari, 2004). In this chapter, the Research Design, Sampling Design, Data Collection Methods, and Data Analysis are discussed. All the elements in this chapter are constructed based upon the purpose of the research which is identifying the Challenges due to implementation of ERP. Primary data were mainly used for this research.

## 3.1. Research Design and Approach

Research design is a blue print which facilitates the smooth sailing of the various research operations, thereby making research as efficient as possible hence yielding maximum information with minimal expenditure of effort, time and money (Kothari 2004).

Descriptive study according to Kothari (2004) are those studies which are concerned with describing the characteristics of a particular individual, or of a group. Descriptive is the most commonly used research method in social research. Juliet (2004) indicates that results from such a survey method are easily extrapolated to the entire population. Besides this, the method is time saving, and less costly.

Descriptive survey research method employs both qualitative and quantitative approach. This method was selected because it is planned method of data collection which helps to gather the necessary information on the issue under study. Thus, the descriptive survey method was employed to achieve the objectives of the research, since it shows prevailing conditions of particular trends. Also it is one of important tool to use quantitative approach in manageable form. The researcher also used qualitative purposive explanation.

## 3.2. Population and Sampling Design

Since the study aimed at assessing the implementation of ERP, its Challenges the target population comprised of all users of ERP Systems in AIC.The total users of ERP in AIC are 145.All directorates namely Claims Directorate, underwriting and Branch Operations Directorate, Reinsurance Directorate, Finance and Accounts Directorate, Research and business Development Directorate, Management information System Directorate, human capital management directorate, Legal Directorate, Audit and inspection directorate and all branches including outlining branches use the system. In all directorates every person who is assigned a personal computer and possesses an electronically generated ID number are users of the system and at branch level all employees are users of the system.

For this study, a non-probability sampling of purposive sampling techniques are adopted and followed by convenience sampling which are also were used to obtain responses from different groups of Awash insurance branch and Directorate in Addis Ababa and, employees and directors situated at head office. Since the directorates are located at the head office, due to location convenience all Directorates were selected. Accordingly, fifty employees from Nine directorates namely Claims Directorate having Fifty two Employees, Underwriting and Branch Operations Directorate having seven Employees, Reinsurance Directorate having five Employees, Finance and Accounts Directorate having twenty three Employees, Research and business Development Directorate having nine Employees, Management information System Directorate having eleven Employees, human capital management directorate having Nine Employees, Legal Directorate having Seven Employees, and Audit and inspection directorate having Six Employees and one Branch; Finfine Grand main Branch having 16 Employees in Addis Ababa, were selected purposefully due to all the processes incorporated in the system are operational in this branch in order to respond to the questionnaire of the researcher. They were selected based on their accessibility, proximity, ERP exposure, willingness to respond, convenience and all were members of the ERP implementation team. Every diGenerally nearly a quarter of the total population (i.e. 145 ERP users in AIC) has been taken. In the research each directorate have a director, a Manager and three supervisors who were all exclusively part of the project team and were selected. All parties involved in the implementation process of Enterprise Resources planning System are represented by the sample. The

sample consists of two main clusters which are end users and management. Five employees from each directorate and one main Branch are selected purposefully based on their work exposure, accessibility,

proximity, willingness to respond and convenience from each Directorate and One Main Branch; Finfine, one Director, (senior management) One manager (Middle management) and Three End users (supervisors) are selected in the sample cluster which comprised a total of fifty Employees.

End users are those staffs who enter the data in the system, extract data from the system or have any other interaction with the system. The management is the decision maker based on the output of the system. All the selected sample size which is One Director (Senior Management) One Manager (Middle Management) and Officers (Supervisors) have directly participated in all phases of the implementation process.

| **Directorate/Branch** | **Total number of workers** | **Selected Sample** | | |
|---|---|---|---|---|
| | | **Senior Management** | **Middle Management** | **Supervisors** |
| Claims Directorate | 52 | 1 | 1 | 3 |
| Underwriting and Branch Operations Directorate | 7 | 1 | 1 | 3 |
| Reinsurance Directorate | 5 | 1 | 1 | 3 |
| Finance and Accounts Directorate | 23 | 1 | 1 | 3 |
| Research and business Development Directorate | 9 | 1 | 1 | 3 |
| Management information System Directorate | 11 | 1 | 1 | 3 |
| human capital management directorate | 9 | 1 | 1 | 3 |
| Legal Directorate | 7 | 1 | 1 | 3 |
| Audit and inspection directorate | 6 | 1 | 1 | 3 |
| Finfine Grand Main Branch | 16 | 1 | 1 | 3 |
| **Total** | **145** | **10** | **10** | **30** |

*Table 3.1:- Sample size taken*

## 3.3 Data Collection Methods

Various sources were used to collect data for this study. Techniques that were used in data collection include questionnaire and documentary review.

**Primary Data**

The primary data are those which are collected for the first time and thus happen to be original in character (Kothari, 2004). In this study, the primary data were collected through questionnaires prepared by the researcher.

**Questionnaire**

The questionnaire is comprised with closed-ended questions. The questionnaires were structured as it only allows a limited response options for the respondents. The questionnaires were circulated to nine directorates and one main Branch Directors, managers and supervisors to obtain responses from different perspectives.

**Secondary Data**

Secondary data are those that are already available, and refer to data that have already been collected and analyzed by someone else (Kothari, 2004). It was gathered from the Company profile of the insurer, annual reports, pamphlets, business plan and performance measurement documents, Strategic Plan management (SPM) of the company, audit reports and ERP Implementation modules.

**Documentary Review**

Various documents are used to collect information needed. In this regard, the relevant Information from published and unpublished documents including textbooks, journals, Company's reports and publications related to ERP implementation, dissertations, online Materials, training manuals and different papers related to Enterprise Resource Planning (ERP).

## 3.4. Data Presentation and Data Analysis Methods

**Data Measurement**

In order to be able to select the appropriate method of analysis, the level of measurement must be understood. For each type of measurement, there is/are an appropriate method/s that can be applied and not others. In this research, ordinal scales were used. Ordinal scale is a ranking or a rating data that normally uses integers in ascending or descending order. The numbers assigned to the important (1, 2, 3,

4, 5) do not indicate that the interval between scales are equal, nor do they indicate absolute quantities. They are merely numerical labels. Based on that scale we have the following:

**The Numbers Assigned Scale**

*Table 3.2Numbers Assigned Scale*

| Item | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree |
|---|---|---|---|---|---|
| Scale | 1 | 2 | 3 | 4 | 5 |

**Data Management**

Data cleaning were done prior to carrying out data analysis so as to ensure validity and Reliability. Each questionnaire were inspected and corrected to ensure that the data Contained therein are eligible and accurate. Thereafter coding was done by assigning numerical values.

**Data Analysis**

First, the researcher collected the needed data by administrating a questionnaire to employees of AIC. After that, the collected data were rearranged, edited and calculated in order to become complete data that is needed for this study. Next, the collected data were analyzed. Regarding data analysis, statistics such as proportion (percentage), tabulation, narrative, scale and trends were employed to analyze and interpret the data obtained. In the descriptive statistics, the basic summary features in the data that depict the nature of the variables were employed. Intervals and ratios were used after the tabulation of data. Then, interpretations were made based on the data analysis in order to arrive at Interpretations and Conclusions.

## 3.5 Validity and reliability Analysis

Validity and reliability of the measures need to be assessed before using the instrument of data collection (Hair et al., 2003). Validity distresses whether the instrument that employed, measure accurately and trustworthy. While reliability emphasis on the consistency of the measurement. Hence, how those analyses were measured is explained hereunder.

### 3.5.1 Validity analysis

According to (Kothari, 2004) Validity is the extent to which differences found with a measuring instrument to reflect true differences among those being tested. Validity can be seen as the core of any form of assessment that is trustworthy and accurate (Bond, 2003, p. 179). In other words, Validity is the most critical criteria when measuring the quality of research design content and construct validity of the instrument. Kothari (2004) has defined Content validity as the extent to which a measuring instrument provides adequate coverage of the topic under study. Accordingly, in order to make sure the content validity is good the instrument must contain a representative of the population. Therefore, the researcher had checked different related literature and thesis work which similar questionnaire was used as well as discussed with the advisor to make sure the validity of the literature. Furthermore, the instrument was pilot tasted with at least 10 respondents to confirm the instrument weren't ambiguous and confusing for the respondents. Hence, the instrument was only distributed after the researcher has checked all the process, aforementioned.

### 3.5.2 Reliability Analysis

According to Messick (1989) reliability refers to the degree to which empirical evidences and theoretical rationales support the adequacy and appropriateness of interpretations and actions based on test scores. Furthermore, Fraenkel et.al (2003) has also defined reliability as the degree to which a test is free from measurement errors, since the more measurement errors occur the less reliable the test. Reliability analysis can be seen as evaluative judgments that are made on the inferences of assessment results or test scores, that is whether correct interpretations are made and actions are taken based on the inferences. In accordance with the above definition the student researcher had used Cronbach's alpha to assess the internal consistency of variables in the research instrument. As defined by Ntoumanis (2001), Cronbach's alpha is a coefficient of reliability used to measure the internal consistency or homogeneity of the items that comprise each scale represented as a number between 0 and 1. Additionally, Zikmund, Babin and Griffin (2010) has also mentioned that a scale with coefficient alpha between 0.6 and 0.7 indicate fair reliability. Though, only a coefficient of 0.7 or higher is acceptable.

Hence, the researcher has used a Cronbach's alpha coefficient of 0.7 or higher to determine reliability in which case the coefficient of this research has resulted 0.87(see appendices 2.2). Furthermore, reliability

is found to be a very important factor in assessment, and is presented as an aspect contributing to validity and not opposed to validity.

## 3.6 Ethical Considerations

In this research study, issues relating to the ethical conduct of research such as informed consent, confidentiality and privacy were upheld. According to (Cooper, 2003).Ethics is the norms or standards of behavior that guide moral choices about our behavior and our relationships with others. In addition, the goal of ethics in research is to lessen that no one is harmed or suffers adverse consequence from research activity. Participants and respondents were given full information on the purpose and objectives of the study in order for them to make informed decisions. Moreover, all information concerning the identity and personality of respondents were treated with utmost confidentiality. Additionally, all information gathered was used for the sole purpose of this research study.

# CHAPTER FOUR

# DATA ANALYSIS AND DISCUSSION

## 4.1 Introduction

This chapter covers the presentation, analysis and interpretation of data collected from primary sources. A total of 50 questionnaires were distributed to Employees of AIC, located in Addis Ababa, to assess Factors Influencing implementation of ERP, challenges in Awash Insurance Company. Out of the 50 questionnaires distributed 43 were properly filled and usable for further analysis. This chapter presents the descriptive analysis on variables of the study and results of regression analysis that constitute the main findings of this study. All the data were coded and entered in to SPSS version 20 as well as inferences were made based on the statistical results.

A reliability test is used to assess consistency in measurement items. If a research tool is consistent, stable, predictable and accurate, it is said to be reliable. The greater the degree of consistency and stability in an instrument, the greater its reliability. (Bhattacherjee, 2012) defined reliability as the degree to which the measure of a construct is consistent or dependable. Internal consistency reliability test was used to determine reliability of the questionnaire by calculating Cronbach's Alpha which is used to measure the internal consistency of the measurement items. If a coefficient alpha is between 0.6 and 0.7 it indicates that there is fair reliability, Higher Alpha coefficients indicate higher scale reliability (Joseph, 2003).

As shown in table below scale reliability Cronbach Alphas coefficients for top management Support is .831, project team competency is .803, user training and Human Capability is .823, interdepartmental communication is .839, Decision Making is .837, IT infrastructure is .824 and ERP implementation evaluation is .805. This study also demonstrates high internal consistency and the total Cronbach Alpha coefficient is .845. Therefore, this study demonstrates high reliability.

Validity refers to the extent of which a test measures what we actually wish to measure. The questionnaire was adapted from other research paper by (Selvakumar Swaminathan, 2011).

Pilot testing allowsassessing the question's validity and the likely reliability of the data (Ranjit, 2011). It also enables the researcher to know whether the design of data collection instruments is successful in meeting the research objectives and in obtaining meaningful responses. In line with the above assumption pilot test was conducted and this validation was made regarding the

reliability of the questionnaires through the use of Cronbach's Alpha. Subsequently, when the pilot test was successful the researcher proceeded with the final distribution of the questionnaire.

Table 4.1 shows the reliability test Cronbach's Alpha coefficients for Assessment of ERP in the case of AIC. The Cronbach's Alpha coefficients of the variables range from 0.803 to 0.839. And the overall Cronbach's Alpha coefficient for expected-scale items is 0.845. Based on the examination of the research scales and constructs, it can be concluded that each variable represents a reliable and valid construct.

*Table 4.1 Reliability Test (Cronbach's Alpha)*

| **Dimensions** | **Cronbach's Alpha coefficients** |
|---|---|
| Top Management Support | .831 |
| project team competency | .803 |
| user training and Human capability | .823 |
| Interdepartmental communication | .839 |
| Decision Making | .837 |
| IT Infrastructure | .824 |
| ERP Implementation Evaluation | .805 |
| **Reliability of Total Scale** | **.845** |

Source: Own Survey Result, 2019

## 4.3. Demographic Characteristics of Respondents

As shown in table 4.2 below that majority of the respondents are male which accounts for 68% or more than half of the total respondents while the rest 32% are female.

The majority of respondents are between 31-40 years of age, which accounts to 50% of the total respondents. The other 28% of the respondents falls between 41 and 50 age group category and the remaining 12% fall under less than 30 years. This result indicates that there are more young employees' in the organization which during implementation could have a positive result during training, coping up with organizational change and creating a fluent communication among departments. And from 41-50 were accounted for 28% which provided the experience and exposure they have towards the implantation.

The academic qualification of the respondents' shows that majority of the employees 64% hold their Degree, 77.9% hold Masters and 2% hold PhD. The academic qualification of respondents is expected to enhance the quality of the data as they are likely to understand the questionnaire and forward their view fairly and accurately.

*Table 4.2 Demographic characteristics of respondents*

| | Item | Frequency | Percent |
|---|---|---|---|
| **Gender** | Male | 34 | 68 % |
| | Female | 16 | 32% |
| | **Total** | **50** | **100%** |
| **Age** | Less than 30 years | 6 | 12% |
| | Between 31 and 40 years | 25 | 50% |
| | Between 41 and 50 years | 14 | 28% |
| | Between 51 and 60 years | 0 | 0% |
| | **Total** | **50** | **100%** |
| **Qualification** | Diploma | 0 | 0% |
| | Degree | 32 | 64% |
| | Masters | 17 | 34% |
| | PhD | 1 | 2% |
| | **Total** | **50** | **100%** |

Source: Own Survey Result, 2019

## 4.4. Challenges of ERP implementation in A.I.C

The different factors that can affect implementation of ERP in Awash Insurance Company are Top Management Support, Project Team Competency, User Training and Human Capability, Interdepartmental Communication, Decision Making and IT Infrastructure have been stated in the literature review and were analyzed as presented here below.

### 4.4.1Top Management Support

For exploring the role of top management in ERP implementation project in AIC the researcher provided 7 (as shown in table 4.3) questions and offered these questions to all users of ERP. The final result showed that the mean of top management support is 1.9402 and the standard deviation is 0.55240. This means that top management had an appropriate support of ERP implementation regarding allocation of resource, delegation of authority, and motivation of employees. Overall, top management has played an instrumental role in the implementation process. The result obtained above was consistent to previous studies of (Huang, 2010), (Harrison, 1997), which considers TMS is one of the most important factors for success of ERP implementation.

As Table 4.3 shows most of the respondents were satisfied with all questions related with support of top management. When asked if they agree that top management has allocated all the required resources (time, budget and money) for ERP implementation 51.2% of the respondents agreed and when asked if top management has delegated implementation authority for project managers 51.2% were agreed. In addition when they were further asked if top management has understood the objectives of ERP 45.3% were agreed, when asked if top management had a good knowledge of ERP 48.8% were agreed, when asked if top management had taken a self-motivated role in leading the ERP implementation 54.7% were agreed, when asked if top management had taken all the necessary risk and responsibilities during ERP implementation 54.7% were agreed and when finally asked that if top management has set official policies 53.5% were agreed. From the above responses it can be seen that top management Support has been constantly recognized as the most vital and crucial success factor in ERP system implementation.

*Table 4.3 Summary of Survey Findings for Top Management Support*

| | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree | Remark |
|---|---|---|---|---|---|---|
| Top management has allocated all the required resources (time, budget and money) for ERP implementation | 36% | 51.2% | 12.8% | 0% | | Agree |
| Top management has delegated implementation authority for project Managers. | 33.7% | 51.2% | 14% | 1.2% | | Agree |
| Top management has understood the Objectives of ERP. | 39.5% | 45.3% | 10.5% | 4.7% | | Agree |
| Top management had a good Knowledge of ERP. | 22.1% | 48.8% | 23.3% | 5.8% | | Agree |
| Top management had taken a self-motivated role in leading the ERP Implementation | 25.6% | 54.7% | 17.4% | 1.2% | 1.2% | Agree |
| Top management had taken all the necessary risk and responsibilities During ERP implementation. | 25.6% | 54.7% | 16.3% | 3.5% | | Agree |
| Top management has set official Policies. | 19.8% | 53.5% | 23.3% | 3.5% | | Agree |

Source: Own Survey Result, 2019

### 4.4.2 Project Team Competency

For investigating project team competency six questions were designed to all users of ERP. As represented in Table 4.10, the mean value 1.9864 for this variable showed that project team was competent. This means the project was composed of skilled, qualified and experienced people who had a good knowledge in business and technical aspects. The result concurs with results of a research done by (Joycelyn L. Harrison, 1997). (Emad Abu-Shanab, 2015), who showed PTC is one of the most important factors for successful ERP implementation. The low value of standard deviation, 0.54964 indicates a low dispersion of data and a consensus among the respondents on the mean.

As Table 4.4 shows majority of the respondents was satisfied with all questions related to project team competency. The respondents were asked if the team members were skilled or qualified 59.3% were agreed, the respondent also asked if The ERP project has been the top and only priority for the team 58.1% were Agreed, and the respondent further asked that if the team members had knowledge of the key issues relating to ERP implementation 61.6% were agreed. when asked if the project team had experienced in previous ERP implementations 55.8% were Agreed, when asked if The team members had business and technical knowledge 51.2% were Agreed, when Finally asked if The team members has carefully been selected based on their knowledge and ability to accept change 46.5% were Agreed. From the above responses it can be seen that Project Team were skilled and qualified to lead the implantation having the needed experience and technical knowledge.

*Table 4.4 Summary of Survey Findings for Project Team Competency*

| | **Strongly Agree** | **Agree** | **Neutral** | **Disagree** | **Strongly Disagree** | **Remark** |
|---|---|---|---|---|---|---|
| The team members were skilled or Qualified. | 27.9% | 59.3% | 10,5% | 2.3% | | Agree |
| The ERP project has been the top and Only priority for the team. | 24.4% | 58.1% | 14% | 3.5% | | Agree |
| The team members had a knowledge of the key issues relating to ERP Implementation | 20.9% | 61.6% | 14% | 3.5% | | Agree |
| The project team had experienced in Previous ERP implementations. | 23.3% | 55.8% | 18.6% | 2.3% | | Agree |
| The team members had business and technical knowledge | 25.6% | 51.2% | 23.3% | | | Agree |
| The team members has carefully been selected based on their knowledge and ability to accept change | 24.4% | 46.5% | 23.3% | 5.8% | | Agree |

Source: Own Survey Result, 2019

### 4.4.3 User Training and Human Capability

In order to study User Training and Human Capability factor the researcher designed eight questions (see table 4.5) to all of the ERP users. The final result showed that the mean of this variable is 1.9331 and the standard deviation is 0.40661. The mean value indicates that organization wide training program with appropriate training materials which targets on the ERP application was designed and provided by highly qualified trainers. This result is also supported by other researchers like (Emad Abu-Shanab, 2015), (Severin V. Grabski, 2011) and (AL-Sabaawi, 2015) which considers User Training and Human Capability is one of the most important critical success factor for ERP implementation.

As Table 4.5 shows majority of the respondents was satisfied with questions related to User Training and Human Capability. The respondents were asked if the Organization has provided all resources required for training 67.4% were Agreed, when asked if the Training programs were properly and well designed for end-users 69.8% were Agreed, the respondent further asked if the Training materials (manual) have been customized for each specific Jobs 67.4% were Agreed, when asked that if An organization-wide training program has been placed and all employees where involved 72.1% were Agreed, when asked if the Training materials target the entire business task not only the ERP screen and reports 76.7% were Agreed, when asked if Enough time was allocated for ERP. Training 80.2% were agreed, when asked if the Training material had been built by AIC functional Experts 70.9% were agreed, and finally the respondent asked if Training program was handled by highly qualified consultants and trainers 69.8% were agreed. Therefore, from the above responses it can be concluded that User Training and Human Capability support successful implementation of ERP and also helps employees of the company to understand the system in easy way.

*Table 4.5 Summary of Survey Findings for User Training and Human Capability*

| | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree | Remark |
|---|---|---|---|---|---|---|
| Organization has provided all resources Required for training. | 25.6% | 65.1% | 5.8% | 3.5% | 0% | Agree |
| Training programs were properly and well designed for end-users. | 19.8% | 69.8% | 5.8% | 4.7% | | Agree |

| | | | | | | |
|---|---|---|---|---|---|---|
| Training materials (manual) have been Customized for each specific Jobs. | 24.4% | 67.4% | 3.5% | 4.7% | | Agree |
| An organization-wide training program has been placed and all employees where Involved | 15.1% | 72.1% | 7% | 5.8% | | Agree |
| Training materials target the entire business task, not only the ERP screen and reports | 12.8% | 76.7% | 7% | 3.5% | | Agree |
| Enough time was allocated for ERP Training. | 11.6% | 80.2% | 5.8% | 2.3% | | Agree |
| Training material had been built by AIC functional Experts | 24.4% | 70.9% | 4.7 | | | Agree |
| Training program was handled by highly qualified consultants and trainers | 20.9% | 69.8% | 5.8% | 3.5% | | Agree |

Source: Own Survey Result, 2019

### 4.4.4 Interdepartmental Communication

For investigating interdepartmental communication five questions were designed for all ERP users. As represented in Table 4.10, the mean value 1.9884 for this variable showed that interdepartmental communication was effective. This means regular cross functional meeting was set to share new methods of working and collect improvement suggestions. IT staffs also fully support users. This result is also supported by other researchers like (Emad Abu-Shanab, 2015), which considers Interdepartmental Communication is one of the most important factors for success implementation. The low value of standard deviation, 0.44495 indicates a low dispersion of data and a consensus among the respondents on the mean.

As Table 4.6 shows most of the respondents were satisfied with questions related to interdepartmental communication. The respondents were asked that if there were regular cross functional meeting to discuss about the ERP 73.3% were Agreed, when asked if There were regular internal group meeting to share new method of using ERP 81.4% were Agreed, when asked if ERP improvement suggestions had been regularly collected from multiple employees levels 73.3%were

Agreed, when asked IT staff fully support all functional users during ERP implementation 72.1% were Agreed, when the respondent Finally asked that Communication team was set to solve the departmental Conflicts that arise during the implementation 76.7%were Agreed. From the above Responses it can be seen that Interdepartmental Communication is a crucial factor while implementing of ERP. In regards to holding meeting and discussions to mitigate any conflicts that may arise during the process and to synchronize the whole system to work in harmony was done successfully.

*Table 4.6 Summary of Survey Findings for Interdepartmental communication*

| | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree | Remark |
|---|---|---|---|---|---|---|
| There were regular cross functional meeting to discuss about the ERP | 17.4% | 73.3% | 4.7% | 4.7% | 0% | Agree |
| There were regular internal group meeting to share new method of using ERP. | 12.8% | 81.4% | 3.5% | 2.3% | | Agree |
| ERP improvement suggestions had been regularly collected from multiple employees levels | 15.1% | 73.3% | 4.7% | 7% | | Agree |
| IT staff fully support all functional users during ERP implementation | 22.1% | 72.1% | 3.5% | 2.3% | | Agree |
| Communication team was set to solve the departmental Conflicts that arise during the implementation | 10.5% | 76.7% | 4.7% | 5.8% | 2.3% | Agree |

Source: Own Survey Result, 2019

### 4.4.5 Decision Making

Decision Making was investigated by four questions and all users of ERP answered these questions. The mean value for this variable is 1.9564 and it indicates decision making in organizational structure change was strong in ERP implementation project in AIC. The result of this study is supported by other researchers like (Aamir Ijaz, 2014) and (Severin V. Grabski, 2011)which considers Decision Making is one of the most important contribution of ERP implementation success.

As Table 4.7 shows most of the respondents were satisfied with questions related to Decision Making. The respondent where asked that if ERP Project saves time and Resources and

80.2% were Agreed, when asked if Decision making abilities are aided by ERP 81.4% were Agreed also when asked if Using ERP greatly enhanced internal control in the company 82.6% were Agreed finally when the respondent are asked that if The system provides timely access to accurate data 79.1% were Agreed. From the response it can be seen that Decision Making is one of the Main contributions while implementing ERP.

*Table 4.7 Summary of Survey Findings for Decision Making*

| | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree | Remark |
|---|---|---|---|---|---|---|
| ERP Project saves time and Resources | 9.3% | 80.2% | 4.7% | 5.8% | 0% | Agree |
| Decision making abilities are aided by ERP | 15.1% | 81.4% | 3.5% | | | Agree |
| Using ERP greatly enhanced internal control in the company | 14% | 82.6% | 3.5% | | | Agree |
| The system provides timely access to accurate data | 12.8% | 79.1% | 5.8% | 2.3% | | Agree |

Source: Own Survey Result, 2019

### 4.4.6 I.T Infrastructure

Four questions were designed to assess the role of IT infrastructure on ERP implementation. As it's observed in Table 4.10 the mean value of this dependent variable is 1.9186 which proves the great rolein adding the ERP implementation. This study is also supported by other researchers like (Joycelyn L. Harrison, 1997) which considers IT infrastructure is one of the most important factors for successful ERP implementation.

As Table 4.8 shows majority of the respondents was satisfied with questions related to IT Infrastructure. The respondents were asked that if All the necessary IT hardware components were provided 57% were Agreed, when asked if All the necessary Software were provided 61.6% were Agreed, when asked if Network integration were done 57% were Agreed, when asked if Data storage and protection were managed 54.7% were Agreed

. From the response it can be seen that IT Infrastructure is the crucial factors while implementing ERP. In addition the needed IT infrastructure, network integration which is has a major role in the implantation process was given a due attention.

*Table 4.8 Summary of Survey Findings for Consultant involvement*

| | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree | Remark |
|---|---|---|---|---|---|---|
| All the necessary IT hardware components were provided | 26.7% | 57% | 15.1% | 1.2% | | Agree |
| All the necessary Software were provided | 24.4% | 61.6% | 14% | | | Agree |
| Network integration were done | 26.7% | 57% | 15.1% | 1.2% | | Agree |
| Data storage and protection were managed | 25.6%% | 54.7% | 16.3% | 3.5% | | Agree |

Source: Own Survey Result, 2019

### 4.4.7 ERP Implementation Evaluation

The mean value of ERP users' response to ten questions which are designed to measure the success of ERP implementation is 1.8477. This indicates overall implementation is successful and it improves productivity, operational efficiency, Decision Making, financial visibility and control.

As Table 4.9 shows majority of the respondents were satisfied with questions related to ERP implementation evaluation. When the respondent asked that overall ERP implementation was successful 57% were Agreed, when asked ERP implementation evaluation has realized the expected benefits to the business 60.5% were agreed, when asked AIC's productivity is improved after using ERP 61.6%, were Agreed, when asked Business operational efficiency has been improved after using ERP 65.1% were Agreed, when asked Business processes have been updated through the use of ERP 68.6% were agreed, when asked ERP allows for better control of business operating expenses 62.8% were Agreed, when asked if The financial visibility has been improved after implementing enterprise resource planning (ERP)

62.8%where Agreed, when asked ERP is integrated in the whole business process 59.3% were Agreed, ERP has improved Decision Making62.8% were Agreed when the respondent finally asked ERP system is easy to operate and user friendly 60.5% were Agreed from the response it can be seen that the respondent Agreed that the overall ERP implementation were successfully and effectively implemented. The operational efficiency and productivity were enhanced and the whole business process was integrated and considerably reduced operational administrative costs in return increasing customer satisfaction.

*Table 4.9 Summary of Survey Findings for ERP Implementation Evaluation*

| | **Strongly Agree** | **Agree** | **Neutral** | **Disagree** | **Strongly Disagree** | **Remark** |
|---|---|---|---|---|---|---|
| Overall, ERP Implementation **was** Successful. | 34.9% | 57% | 8.1% | 0% | 0% | Agree |
| ERP implementation has realized the Expected benefits to the business. | 26.7% | 60.5% | 12.8% | | | Agree |
| AIC's productivity is improved after using ERP | 25.6% | 61.6% | 12.8% | | | Agree |
| Business operational efficiency has been improved after using ERP | 23.3% | 65.1% | 11.6% | | | Agree |
| Business processes have been updated through use of ERP | 24.4% | 68.6% | 5.8% | 1.2% | | Agree |
| ERP allows for better control of business operating expenses | 26.7% | 62.8% | 10.5% | | | Agree |
| The financial visibility has been improved after implementing ERP | 22.1% | 62.8% | 15.1% | | | Agree |
| ERP is integrated in the whole business process | 30.2% | 59.3% | 10.5% | | | Agree |
| ERP has improved customer satisfaction | 20.9% | 62.8% | 14% | 2.3% | | Agree |
| ERP system is easy to operate and user Friendly. | 32.6% | 60.5% | 7% | | | Agree |

Source: Own Survey Result, 2019

## 4.5. Mean and Standard Deviation of Variable

Table 4.10 implies mean scores and deviations from the mean towards the different variable (Top Management Support, project team competency, User Training and Human Capability, Interdepartmental communication, Decision making, IT infrastructure, ERP Implementation Evaluation).

The code between one and two indicate a view of strongly agree and agree response consecutively. The variation from the mean further indicates the result could not vary significantly from the mean indicating the overall result still has a positive response regarding the parameters assessed. The average Sensitivity regarding the selected variables had a mean score that ranges between 1.9884, and 1.8477 respectively; with a standard deviation ranging from 0.40661 and 0.56433 respectively. Indicating the variation from the mean is small. The result also implies that the respondents have a positive view regarding the variables raised on the questioner. The variation from the mean further indicates the result could not vary significantly from the mean indicating the overall result regarding the parameters considering the variation still has a positive response from the respondents. Overall the study informed that Top Management Support, Project Team Competency, User Training and Human Capability, Interdepartmental Communication, Decision Making and IT Infrastructure were the factors that were found to be the challenges for the success of the implantation.

# CHAPTER FIVE

# FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

This chapter presents the summary, Conclusion and possible recommendations based on the analysis and interpretation of the data that is collected through questionnaires and interviews.

## 5.1 Summary of Major Findings

- ✓ The result of the study indicates that the majority of the respondents agreed top management Support has been constantly recognized as the most vital and crucial success factor in ERP system implementation.51% of the respondents agreed that top management has allocated the necessary resources.

- ✓ .This result indicated that 50% of the respondents are young employees' in the organization which during implementation had a positive result during training, coping up with organizational change and creating a fluent communication among departments.

- ✓ As to project team competency 59.3% of the respondents responded Project Team was skilled and qualified to lead the implantation process.

- ✓ From the responses it can be concluded that 65.1 % of the respondents reacted that User Training and Human Capability support for the successful implementation of ERP and also helps employees of the company to understand the system in easy way.

- ✓ It was found that Interdepartmental Communication is a crucial factor while implementing of ERP.73.3% of the respondents agreed the communication enhanced the Implementation process.

- ✓ Decision Making is one of the Main contributions with an agreed percentage of 80.2 while implementing ERP.

- ✓ IT Infrastructure is the crucial factors while implementing ERP.

## 5.2. Conclusions

As discussed in the introduction and as it was shown through the statement of the problem and literature review, there isn't a research stream on ERP implementations for insurance sector. This research aims to fill this gap. Throughout the study all questions were answered. The following are the main findings and results of the study;

ERP system has been implemented successfully with relative weight of 91.9%. This is indeed a good indicator of success of ERP implementation for AIC. Besides, the research revealed that in principle, international theoretical work on ERP implementations critical success factors through the challenges they avail and the contribution they provide can be fitted into the Ethiopian Insurance sector context. All six critical success factors that have been discussed in the international literature and it have also been found as a critical success factors in this study.

Top management support has been found to be important factor of implementing successfully the ERP system. Top management support is one of the important critical success factors. Top management in AIC have set official policies and taken a self-motivated role in leading the ERP implementation. They have been committed to allocate all the required resources (time, budget and money) for ERP system implementation. Therefore, top management contributed greatly in supporting its organization in ERP implementation processes by maintaining a financial plan and delegating implementation authority.

Project team competency also which is a challenge, played a significant role for the success of the ERP implementation. The project team was composed of skilled employees with relevant experience in prior ERP projects. The team members have passed through different tests and interviews to check their knowledge and ability to accept change.

User Training and Human Capability were important for the success of AIC's ERP implementation. This was one of main CSFs of ERP implementation. AIC has focused on this factor and considered it as an additional leverage and contribution due to the technical knowledge possessed by the team during the implementation. The company has designed training materials that focuses on both the entire business task and ERP features. Adequate training was provided for end users by allocating enough time and money.

The training materials were developed and the training was provided by functional experts and Internal AIC staffs employed in different Branches across the country .Inter departmental communication were important and a challenge to a successful ERP implementation. ERP implementation project team in AIC had built a communication team who would collect system improvement suggestions, support functional users and solve any departmental conflicts.

Decision Making has been found to be the important contribution of implementing the ERP system successfully. Due to the implementation, data, information internal control and time and resources were greatly managed and saved.

IT infrastructures have a significant role in the success of the ERP implementation. The company employed all the necessary hardware and software equipment needs and allocated a budget and employees for the networking aspect of the implementation process of ERP.

## 5.3. Recommendations

Enterprise Resource Planning (ERP) systems are the most integrated information systems that cut across various organizations and functional areas. It has been observed that the majority of ERP system challenge proved to be a failure either in the design or its implementation. A number of reasons contribute in the success or failure of ERP systems. ERP systems inherently present unique challenges in implementation phase as Team competency, Interdepartmental communication and IT Infrastructures risks due to tightly linked interdependencies of business processes, relational databases and process reengineering and contributions towards Top management commitment, user and human capability and after the finalization phase Knowledge of such factors is important in the design of system and programme management as they contribute to the overall success of the system. ERP is being demanded is almost all enterprises and companies in Ethiopia. So, the researcher recommends and suggests the following two main points.

The second phase of upgrading the current ERP system in AIC is planned to be done in 2020. Thus, the company can consider the challenges faced in respect of the success factors identified in this study as input to improve the second phase of the project.

Other Ethiopian organizations specifically Insurance companies planning to implement ERP system can consider implementing all the challenges faced in respect of the success factors identified in this study as input for managing their ERP project.

In order to improve success of future ERP implementation the researcher recommends the following points for each dependent variable. Top management of organization should strengthen supporting the project from the very beginning and should inform and motivate employees of the company in all stages of ERP implementation.

Having an external Consultant services which can provide different insights can be a major contribution for the success of the implantation and should strengthen providing training to the project team and users in order to increase their knowledge and expertise.

Companies should have professionally, socially and personally competent project team and strengthen promoting transparent communication in ERP implementation. Also should strengthen their capacity in hiring competent consultant and allow them to involve in each stages of ERP implementation.

## 5.4 Further Research Recommendation

Based on the limitations encountered and the reported findings of this research it is necessary to provide several directions for further research. The following topics are recommended for further study.

A study of the ERP projects implementation Impact of Software selection on the success.

A study of the ERP projects implementation Impact of ERP on organizational performance with the use of structural equation modeling.

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# APPENDIX I: RESEARCH QUESTIONNAIRE

## St. Mary University College

## SCHOOL OF GRADUATE STUDIES

## MBA- DEPARTMENT OF PROJECT MANAGMENT

## SURVEY QUESTIONNAIRE

This questionnaire is designed to collect first-hand information for a project conducted in partial fulfillment of Master Degree of Business Administration in PROJECT MANAGMENT under the title **Implementation of ERP; its Challenges; the case of Awash Insurance Company**. The completion of the research substantially depends on your cooperation and of the information you give in this questionnaire. Furthermore, the information you provide were solely used for academic purpose. Therefore you are requested to give a genuine response to the questions.

The survey were confidential and will not be used for other purpose other than this paper. Thank you for taking your treasured time to fill out the questionnaire. I appreciate your collaboration in advance.

**Section 1:** Personal information:

1. **Gender:**

☐ Male ☐ Female

2. **Age:**

☐ Less than 30 years ☐ between 41 and 50 years

☐ Between 31 and 40 years ☐ between 51 and 60 years

**3. Qualification:**

☐ Diploma ☐ Masters

☐ Degree ☐ Phd

**4.Designation/Title**
**Role**:

_____

_____

**5. For how many years have you been working for AIC?**

☐ 0-5Year ☐ 6-10 years

☐ 1·1-15 Years ☐ More than 15 Years

The research questions on these topics are operationalized through a series of statements, to which participants are required to respond using a five point format. 1 represent strongly agree, 2 represent agree, 3 represent neutral, 4 represent disagree and 5 represent strongly disagree.

| 1- **Top Management Support (TMS)** | | | | | | |
|---|---|---|---|---|---|---|
| To **what extent do you agree on the following statements regarding Top Management Support?** | | | | | | |
| # | Item | 1 | 2 | 3 | 4 | 5 |
| 1 | Top management has allocated all the required resources (time, Resources and money) for ERP implementation. | | | | | |
| 2 | Top management has delegated implementation authority for project managers. | | | | | |
| 3 | Top management has understood the objectives of ERP. | | | | | |
| 4 | Top management had a good knowledge of ERP. | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 5 | Top management had taken a self-motivated role in leading the ERP implementation. | | | | | |
| 6 | Top management had taken all the necessary risk and responsibilities during ERP implementation. | | | | | |
| 7 | Top management has set official policies. | | | | | |

## 2- Team Competency (capability)

To **what extent do you agree on the following statements regarding project team competences?**

| # | Item | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| 1 | The team members were skilled or qualified. | | | | | |
| 2 | The ERP project has been the top and only priority for the team. | | | | | |
| 3 | The team members had knowledge of the key issues relating to ERP implementation. | | | | | |
| 4 | The project team had experienced in previous ERP implementations. | | | | | |
| 5 | The team members had business and technical knowledge | | | | | |
| 6 | The team members have carefully been selected based on their knowledge and ability to accept change. | | | | | |

## 3- User Training and Human Capability

To **what extent do you agree on the following statements regarding users training and Education?**

| # | Item | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| 1 | Organization has provided all resources required for training. | | | | | |
| 2 | Training programs were properly and well designed for end-users. | | | | | |
| 3 | Training materials (manual) have been customized for each specific Job. | | | | | |
| 4 | An organization-wide training program has been placed and all employees where involved | | | | | |
| 5 | Training materials target the entire business task, not only theERP screen and reports | | | | | |
| 6 | Enough time was allocated for ERP training. | | | | | |
| 7 | Training material had been built by AIC functional Experts | | | | | |
| 8 | Training program was handled by highly qualified consultants and trainers. | | | | | |

## 4- Interdepartmental Communication

To **what extent do you agree on the following statements regarding Interdepartmental Communication?**

| # | Item | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| 1 | There were regular cross functional meeting to discuss about the ERP. | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 2 | There were regular internal group meeting to share new method of using ERP. | | | | | |
| 3 | ERP improvement suggestions had been regularly collected from multiple employees levels | | | | | |
| 4 | IT staff fully support all functional users during ERP implementation. | | | | | |
| 5 | Communication team was set to solve the departmental Conflicts that arise during the implementation. | | | | | |

## 5- Decision Making

To **what extent do you agree on the following statements regarding Decision Making?**

| # | Item | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| 1 | ERP Project saves time and Resources | | | | | |
| 2 | Decision making abilities are aided by ERP | | | | | |
| 3 | Using ERP greatly enhanced internal control in the company | | | | | |
| 4 | The system provides timely access to accurate data. | | | | | |

## 6- ERP IT Infrastructure

To **what extent do you agree on the following statements regarding ERP IT Infrastructure?**

| ? | | | | | | |
|---|---|---|---|---|---|---|
| # | Item | 1 | 2 | 3 | 4 | 5 |
| 1 | All the necessary IT hardware components were provided | | | | | |
| 2 | All the necessary Software were provided | | | | | |
| 3 | Network integration were done | | | | | |
| 4 | Data storage and protection were managed | | | | | |

## 7- ERP Implementation Evaluation

**To what extent do you agree on the following statements regarding the evaluation of ERP Implementation?**

| # | Item | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| 1 | Overall, ERP implementation was successful. | | | | | |
| 2 | ERP implementation has realized the expected benefits to the Business. | | | | | |
| 3 | AIC productivity is improved after using ERP | | | | | |
| 4 | Business operational efficiency has been improved after using ERP | | | | | |
| 5 | Business processes have been updated through use of ERP | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 6 | ERP allows for better control of business operating expenses | | | | | |
| 7 | The financial visibility has been improved after implementing ERP | | | | | |
| 8 | ERP is integrated in the whole business process | | | | | |
| 9 | ERP has improved customer satisfaction | | | | | |
| 10 | ERP system is easy to operate and user friendly. | | | | | |

Thank you for your time and cooperation!

# APPENDIX II: STATISTICAL OUTPUT DATA

**Cronbach's Alpha Test**

| Cronbach's Alpha | No. of Items |
|---|---|
| .845 | 7 |

| | Cronbach's Alpha |
|---|---|
| TMS | .831 |
| capability | .803 |
| training | .823 |
| communication | .839 |
| Decision making | .837 |
| IT Infrastructure | .824 |
| Evaluation | .805 |