

**THE RELATIONSHIP BETWEEN ENTERPRISE RESOURCE  
PLANNING AND FINANCIAL PERFORMANCE OF  
COMMERCIAL STATE CORPORATIONS IN KENYA.**

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A MASTER OF BUSINESS ADMINISTRATION DEGREE OF THE  
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## **DECLARATION**

I declare that this is my original work and has not been presented in any other University or college for examination or academic purposes.

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## **DEDICATION**

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## **LIST OF ABBREVIATIONS**

ATO	Assets Turn Over
CEO	Chief Executive Officer
ERP	Enterprise Resource Planning
GOK	Government of Kenya
HRM	Human Resource Management
IFMIS	Integrated Financial Information Management System
IT	Information Technology
ROA	Return on Assets
ROI	Return on Investments
ROS-	Return on Sales
SCAC	State Corporations Advisory Committee
SCM	Supply Chain Management
SOCE	State Owned Commercial Entities

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## ABSTRACT

Technology plays a key role in today's business environment. Many companies greatly rely on computers and software to provide accurate information to effectively manage their business. One way that many corporations have adopted information technology on a large-scale is by installing enterprise resource planning (ERP) systems to accomplish their business transaction and data processing needs. The research discussed issues relating to ERP's impact on financial performance of commercial state corporations in Kenya. The research employed a descriptive form of research design and used data collection form for data collection. Descriptive analysis was used to analyze the primary data of quantitative nature on the data collection form. Descriptive statistics such as frequencies and percentages augmented with measures of central tendency (mean) was employed. Additionally, return on assets ratio, asset turn over, current ratio and debt ratios were used to calculate pre and post-implementation profitability. Means for each recorded ratio was calculated to obtain the pre and post-implementation means. A paired t-test was performed on the calculated means at a 95% confidence level and at 19df to determine whether there was a significant difference between the means of the two periods for each ratio. The study found out that ERP System had a statistically significant influence on the measures of financial performance (i.e. Profitability, Turn-over/Asset utilization, Liquidity, and Solvency ratio) of commercial state corporations in Kenya. Therefore, the study concluded that ERP Systems had a positive statistically significant influence on the financial performance of commercial state corporations in Kenya. The researcher recommends the adoption of the ERP System in all commercial state corporations and subsequent improvement of the same so as to facilitate efficiency and guaranteed improved financial performance.

**Key Words:** Enterprise Resource Plan, Financial Performance, Commercial State Corporation

# CHAPTER ONE: INTRODUCTION

## 1.1 Background of the Study

Technology plays a key role in today's business environment. Many companies greatly rely on computers and software to provide accurate information and to effectively manage their business. It is becoming increasingly necessary for all businesses to incorporate information technology solutions in order to operate successfully. One way in which a number of organizations have adopted information technology on a large-scale is by installing enterprise resource planning (ERP) systems to accomplish their business transaction and data processing needs (Benjamin & Paul, 2004).

Government institutions in Kenya are fast embracing the use of information systems to run and interlink the activities of various government entities in order to improve efficiency, accountability and transparency. More evidently is the use of the Integrated Financial Management Information System Module which was first rolled out to government ministries in 2003 and to the county governments in 2013, while its re-engineering process began in 2011 (Muigai, 2012). The National Treasury also implemented an Integrated Financial Management Information System (IFMIS) as part of its Public Financial Management (PFM) reforms. This was to ensure the government managed public resources in the most efficient, effective and transparent manner (Muigai, 2012). A fully functioning IFMIS can lead to improved governance by providing real-time financial information that managers can use to administer programs effectively, formulate budgets and manage resources (Muigai, 2012).

Research findings on the performance effects of ERP are equivocal. Some researchers found that ERP can affect overall business performance positively; others only found ERP to affect specific areas and not the overall business performance. This therefore suggests that ERP does not always affect business performance positively but some contributing factors affect this relationship (Kang, Park & Yang, 2008). One study suggests that firms may achieve significantly higher stock returns upon announcing the

implementation of an ERP system (Hayes, Hunton & Reck, 2001). Hunton, Lippincott and Reck (2003) found a positive and significant relationship between ERP adoption and non-financial performance, which in turn have a positive impact on both current and long term return on assets and stock return. Nikolaou & Bhattacharya (2006) investigated the impact of post-ERP implementation changes on organizational long-run financial performance. They found that ERP adopting firms who were enhancing their existing ERP systems had better financial performance compared to firms not enhancing or upgrading their existing ERP systems.

In contrast, Kennerley and Neely (2001) concluded that return on sales in specific was found unaffected after implementing ERP systems. Nicolaou (2004) stated that the ratio of general and administration expenses to sales for ERP adopters showed a worse ratio than non-adopters indicating fall in financial performance from this aspect. Velcu (2005) compared the quality of ERP system with business values in less successful ERP users and successful ERP users. The findings revealed that the quality of an ERP System does not change the business value of the firm. To counter these conflicting views it was therefore necessary to re-evaluate the link between ERP implementation and its impact on the financial performance of an entity.

### **1.1.1 Enterprise Resource Planning**

Enterprise resource planning system was defined by Benjamin et al.,(2004) as a business management software usually a suite of integrated application that a company can use to collect, store, manage and interpret data from many business activities, including; product planning, cost and development, manufacturing or service delivery, marketing and sales, inventory management, shipping and payment.

ERP systems collect and disseminate timely information to managers and thus improve their ability to process and analyze accounting information ( Hitt, Wu , & Zhou, 2002).ERP systems provide management with a unified enterprise view of the firm's financial condition at all times (Dillon, 1999). In addition, these integrated systems eliminate barriers between firm functions, allowing managers unprecedented access to accounting information. The standardized, automated, and integrated ERP system

environment is also expected to efficiently process transactions and reduce reporting lags (O'Leary, 2000).

Hawking, Foster & Bassett (2002), argue that Human Resource Management (HRM) has evolved from an administrative function to a strategic role that can add value to an organization. ERP is represented as a useful tool to help and make work for the users easier and facilitate focus on their work in a direct relation with staff, skills and aspiration of an individual related to the objectives and the goal of the company.

Customer relationship management systems provide the infrastructure that facilitates long-term relationship building with customers. Some examples of the functionality of CRM systems are sales force automation, data warehousing, data mining, decision support and reporting tools (Katz (2002), Suresh (2004)).

The primary benefit of supply chain management systems (SCM) is better operational and business planning. Real-time planning capabilities allow firms to react quickly to supply and demand changes (Raman and Singh, 1998). Increased revenue, increased productivity, operational cost savings, lower inventory, and reduced order-to-fulfillment cycle time are some of the benefits from SCM system implementations (Nucleus Research, 2003a). After successful implementation of ERP, a firm can get more accurate and timely information, ensure high quality decision-making, cost reduction, improved efficiency, reduction of order cycle time and improved customer satisfaction (Liu, Miao & Li, 2007).

Anecdotal evidence supports this expectation, indicating that ERP system adoption positively affect the timeliness of financial accounting information by decreasing the financial close cycle (Jensen and Johnson, 1999). Thus, if managers are motivated to quickly disseminate accounting information to external users, ERP adoptions should assist in this process.

According to (Esteves, 2009), it takes between 1 to 2 years for business benefits of an ERP to start materializing. He also stated that an ERP project does not mature except after 3 years. ERP benefits are expected to be achieved on a continuous basis after implementing the system and not all at once (Esteves, 2009; Wei, 2008).

### **1.1.2 Financial Performance**

Performance is the function of the ability of an organization to gain and manage the resources in several different ways to develop competitive advantage. There are two kinds of performance, financial performance and non-financial performance. Financial performance emphasizes on variables related directly to financial reports (Hansen et al., 2005).

Financial performance may be defined as measuring the results of a firm's policies and operations in monetary terms. These results are reflected in the firm's return on investment, return on assets, value added and profits. According to Holmberg (2000), financial performance is the degree to which a firm is able to achieve strong return on asset and profitability.

Financial performance determines specific measurements that could measure the success of accompany in generating profits. It is calculated by using financial ratios. The ratios are the results of a comparison between numbers of one financial figure and other financial figures. There are several categories of ratios that can be used in measurement of financial performance: profitability, liquidity, solvency, turn-over, efficiency and effectiveness (Sucipto, 2003). Profitability ratios include the return on assets ratio which is a measure of the return on total investments of an enterprise. It is measured by dividing the profit after taxes plus interest by the total assets of an entity. Return on equity is another measure of financial performance. It measures the rate of return on the investment of the owners' common stock (Thompson and Strickland, 1996). It is calculated as below;

$$\frac{(\text{Profits after taxes} - \text{Preferred stock dividends})}{(\text{Total stockholders' equity} - \text{Par value of preferred stock})}$$

### **1.1.3 Enterprise Resource Planning and Financial Performance.**

Financial theory suggests that managers should make investment decisions that maximize the value of the firm. Innovative IT investments increase firm value (Santos, Peffers, & Mauer, 1993). Companies that focus on benefiting customers produce sustained superior financial performance by engendering strategic focus, investment in people, and creative capability. After successful ERP implementation companies can reduce the staff and ultimately reduce the operating cost of staff salaries (Springett, 2004). Wayhan & Werner (2000) concluded that workforce reductions significantly improved subsequent financial performance, particularly in the short term.

In comparing successful ERP adaptors and non-successful ERP adaptors,(Velcu,2005) concluded that successful ERP adopters have significant higher efficiency benefits in terms of Asset Turnover and Capital Turnover than the less successful ERP adopters.

### **1.1.4 Commercial State Corporations in Kenya**

According to the State Corporation Act Chapter (446) of the Laws of Kenya is a corporate body established by or under an act of parliament or, the president by order establishes a state corporation as a body corporate to perform the functions specified in the order. It also refers to a company incorporated under the Companies Act Chapter (486) of the laws of Kenya which is wholly owned or controlled by the government or, a banking institution licensed under The Banking Act Chapter (488) of the Laws of Kenya whose controlling majority is owned by the government.

According to (Njiru, 2008) the Kenya government formed state corporations to meet both commercial and social goals. The role of state corporations in Kenya is to develop and maintain physical infrastructure, delivery of government information, services, and processes that is integrated, accessible, and customized, creation of an enabling environment, development, promotion and diversification of high quality products and services; strengthening of tripartite mechanisms in industrial relations, empower all

Kenyans including the marginalized groups; and maintenance of sustainable industrial harmony and employment.

The State Corporations Advisory Committee (SCAC) has categorized state corporations into different categories depending on the principle activities or nature of the business. They are: financial corporations, commercial and manufacturing, regulatory, public universities, training and research, service corporations, regional development authority and tertiary education and training. According to the recent report of the taskforce on parastatal reforms there were 34 commercial state corporations as at October, 2013.

The State Corporations Act, Chapter (446) of the Laws of Kenya, further describes commercial state corporations also known as state owned commercial enterprises (SOCE) as a section of State Corporations that are operating on commercial basis and generate their own revenue. State Corporations are majorly owned by the government (over 50% shareholding). These organizations are considered profitable and progressive if properly managed. To come under the category of state owned commercial enterprise, these agencies are expected to carry on trade on behalf of the government. The others are regulatory and are largely funded by government (Njiru, 2008).

Commercial state corporations are government parastatals that directly generate income, and can therefore independently manage their financial obligations. Where government services can be managed as commercial operations, the State-owned enterprises Act allows the government to provide these services through a similar organizational form as private sector enterprises (Njiru, 2008).

The Parastatal Reform Program Committee stated that the primary objective of state corporations is to reduce financial burden on the Government, to improve service delivery to the public and enhance efficiency. The Government thus, has used various initiatives to bring about financial discipline, managerial and financial autonomy so that the state corporations can operate as commercial entities. In the initial years, the

performance of the state corporations was encouraging. However, with the implementation of economic reforms, discontinuations of price controls and liberalization in the 1990s, the performance went downward. This led to a number of corporations closing or being placed under receivership. Hence, the Government of Kenya needed to drastically make a number of attempts to improve performance of state corporations and one way is through implementation of management information system, (Performance Contracts Steering Committee guidelines [PCSC], 2005).

## **1.2 Research Problem**

The use of enterprise resource planning (ERP) has become increasingly more common in a lot of today's businesses (Ahmed & Ayman, 2011). The advent of an information technology led era and increased competition has forced companies to react to the new changes in information technology in order to remain competitive. Because of this trend, enterprise resource planning has been adopted by many firms in an attempt to improve their business performance. The concept of business performance can be operationalized as financial gains by the organization, operational improvements for the organization or intangible gains for the organization. Enterprise resource planning (ERP) offers distinct advantages in this new business environment as it lower operating costs, reduce cycle times and arguably increase customer satisfaction (Liu, Miao & Li, 2007).

State Corporations are deeply implicated in most fiscal problems of African governments because of their inefficiency, losses, budgetary burdens, and provision of poor products and services. Occasionally, they achieve some non-commercial objectives, which are used to justify their poor economic performance (Louw, 1999). In Kenya, State Corporations consume large portions of scarce national resources and do not always use them effectively or efficiently. With over 160 State Corporations, more than 50% receive direct exchequer funding for either all their expenditure or are subsidized to a very large extent with funding that averages 30% of Development and Recurrent national budget (State Corporations Advisory Committee [SCAC], 2009). The same had been voiced by the Taskforce on Parastatal Reforms in their October 2013 report.

The Kenyan government is fast embracing use of information systems for the purpose of improving efficiency and accountability. However, implementation of ERP systems requires a substantial investment in time, money and internal resources (Bailey, 1999) and is fraught with technical and business risk (Austin and Cotteleer, 1999). A typical ERP installation has a total cost of about \$15 million (O'Leary, 2000) and costs can be as high as 2-3% of revenues (Escalle, Cotteleer & Austin, 1999). Installation takes between 1 and 3 years (21 months on average), with benefits starting to accrue in an average of 31 months (McAfee, 2002) and O'Leary (2000).

Several studies have been done in the area of enterprise resource planning; Poston and Grabski (2000) using archival financial data analyzed a group of firms before and after adoption and found no improvement in general financial performance. However, they also found a significant decrease in the ratio of employees to revenues in all three years of their data, and reduction in the ratio of cost of goods sold to revenues in year three. Velcu (2005) compared the successful ERP adaptors and non-successful ERP adaptors and concluded that successful ERP adopters have significant higher efficiency benefits in terms of asset turnover and capital turnover than the less successful ERP adaptors.

Nyagah (2006) conducted a study on the challenges of ERP implementation, Nzomo (2013) conducted a research on the impact of accounting information system on an organization's efficiency, Leah (2013) conducted a study on the impact of ERP implementation on the role of accountants, while (Njihia & Mwirigi, 2014) carried out a research on impact of ERP systems on firm's performance and narrowed down to commercial banks in Kenya.

None of the studies discussed the impact of enterprise resource planning on the financial performance of commercial state corporations in Kenya. This study therefore aimed at

finding out to what extent does enterprise resource planning impact the overall financial performance of commercial state corporations?

### **1.3 Objectives of the Study**

To establish the relationship between Enterprise Resource Planning and Financial Performance of commercial state corporations in Kenya.

### **1.4 Value of the Study**

Managers would be able to evaluate whether it is necessary to invest in an enterprise resource planning to enhance the firm's financial performance. The study would also be useful to the government in evaluating the performance of commercial state corporations after adoption of an enterprise resource planning system.

The study would be useful to scholars evaluating the performance of state corporations and in particular commercial state corporations upon adoption of enterprise resource planning. The study adds to the body of knowledge in the area of information technology and enterprise resource plans and its results contributes to improved decision-making and setting expectations by firms prior to purchasing an enterprise resource plan system. Future researchers may use this research to further develop models that illustrate the relationship between an enterprise resource planning and financial performance of a firm.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

This chapter reviews theories, literature and studies relevant to the area of study. It contains opinions, attributes, research outcomes and conclusions thereon from previous research work done by other people and organizations.

### **2.2 Theoretical Review**

This section reviews significant theories which are relevant to the area of study. They include the technological acceptance model, information systems success theory and agency theory.

#### **2.2.1 Technology Acceptance Model**

The theory was developed by Davis and Bagozzi (Davis 1989, Bagozzi, Davis & Warshaw 1992). The theory examines the acceptance of ERP systems in organizations. The technology acceptance model states that the process of the diffusion of the system is closely associated with the way in which the innovations are viewed by the users. According to the model, one's actual use of a technology system is influenced directly or indirectly by the user's behavioral intentions, attitude, perceived usefulness of the system, and perceived ease of the system. TAM also proposes that external factors affect intention and actual use through mediated effects on perceived usefulness and perceived ease of use (Davis, 1989).

One of the key elements of the Technology acceptance model is the way financial performance is linked to the way in which new systems are adopted. The cost of a lack of acceptance of new systems has also been mentioned as one of the most significant reasons for a need for managers to be careful about the way in which they deal with the acceptance of new technologies, as the possible economic ramifications of the failure of technological systems can be significant (Bagozzi, 2007). The negative impact of the

failure of systems can be significant, especially in the modern era as organizations are increasingly using information systems to gain and sustain a competitive advantage, and as the systems are becoming the integral part of the information systems in the organization. These issues are important for managers, as they want to ensure that they are able to develop a deep understanding of the needs of their employees, and ensure that they put into practice those systems which motivate the employees, and can therefore improve the financial performance of the organization (Bagozzi, 2007).

### **2.2.2 Information System Success Theory**

The information system success theory was developed by DeLone and McLean (1992). In their model, success of information systems is dependent on information system quality and the output quality of the information system. These dimensions influence the use level and user response to the information system. As a result, the user attitude and organizational performance are influenced.

To determine whether the system made attains its goals and objectives, there should be measurements to measure whether the system has reached the target created to provide value to information system management and information system investment (DeLone et.al, 1992). This is to provide a positive impact to the company.

### **2.2.3 Agency Theory**

Agency theory is a theory that examines the relationship between principal and agent (Jensen and Meckling, 1976). It describes the relationship of cooperation based on managerial behavior, agency costs, and capital structure.

Jensen (1983) divided agency theory into two major parts; the positivist agency theory and the principal-agency theory. The positivist agency theory focuses on the relationship between owners and managers generally in public organizations; while the principal-agency theory can be used more widely in the relationship of principal and agent, such as the relationship between employers and employees, sellers and buyers. To the principal,

the primary goal is to maximize profits through cooperation undertaken, whereas to the agent the main concern is to maximize compensation obtained.

An important proposition of agency theory is that through information systems, the exchange of information, can curb the agent opportunism and provide the principal with better control. There are two ways that an agent can show opportunistic behavior that can be detrimental from the perspective of the implementer. The first, moral hazard, refers to lack of effort on the part of the agent. The second one, adverse selection, refers to the misrepresentation of ability by the agent (Eisenhardt, 1989).

## **2.3 Determinants of Financial Performance**

### **2.3.1 Enterprise Resource Planning**

Financial theory suggests that managers should make investment decisions that maximize the value of the firm. Innovative IT investments increase firm value (Santos, Peffers, & Mauer, 1993). Companies that focus on benefiting customers produce sustained superior financial performance by engendering strategic focus, investment in people, and creative capability. After successful ERP implementation a company can reduce the staff and ultimately reduce the operating cost of staff salaries (Springett, 2004).

Wayhan & Werner (2000) concluded that workforce reductions significantly improved subsequent financial performance, particularly in the short term. In comparing successful ERP adaptors and non-successful ERP adaptors, Velcu, (2005) concluded that successful ERP adopters have significant higher efficiency benefits in terms of asset turnover and capital turnover than the less successful ERP adopters.

### **2.3.2 Industry Concentration and Market Position of the Company.**

Staikouras and Wood (2003) suggest that industry concentration has a positive impact on financial performance. The more concentrated the industry is, the greater the

monopolistic power of the firms will be. This, in turn, improves profit margins of the firms through growth in sales.

A company's financial performance is directly influenced by its market position. Profitability can be decomposed into its main components: net turnover and net profit margin. Ross, Jaffe and Westerfield (1996) argue that both can influence the profitability of a company one time. If a high turnover means better use of assets owned by the company and therefore better efficiency, a higher profit margin means that the entity has substantial market power.

### **2.3.3 The Size and Capital Structure of the Company**

Larger firms use the advantage of the size of their firms to get financial benefits in business relations. Large companies have easier access to the most important factors of production, including human resources and sometimes cheaper funding (Ross et al., 1996).

Capital structure plays an important role in determining corporate financial performance. According to Barton & Gordon (1988) entities with higher profit rates will remain low leveraged because of their ability to finance their own sources. On the other hand, a high degree of leverage increases the risk of bankruptcy of companies.

### **2.3.4 Risk and Growth**

Risk and growth are two other determinants of a firm's financial performance. Since market value is conditioned by the company's results, the level of risk exposure can cause changes in its market value. Economic growth is another component that helps to achieve a better position on the financial markets, because market value also takes into consideration expected future profit (Ross et al., 1996).

Risky firms tend to attract only risk taking investors hence risk and returns ought to be managed so that investors get returns associated with the risk they are bearing Sidra & Attiya (2013).

## **2.4 Empirical Literature Review**

### **2.4.1 Global Studies**

Poston & Grabski (2001) identified the impact of ERP system on financial performance of the business. They selected data from different data bases of firms that publicly disclosed ERP adoption from 1980 to 1997 in PR Newswire press releases in Lexis-Nexus and in the Wall Street journal. They found no significant change in cost or administrative and selling expenses in the 3-year pre and post implementation period of ERP system. (Poston et al., 2001) argued that ERP system effect positively on firm's performance in two ways: it reduces the cost by improving efficiency of business processes in a computerized way and it enhanced decision making ability by providing accurate information in time.

Hunton, Lippincott, &Reck (2003) compared the financial performance of 63 ERP adopters and 60 Non-Adopters. They compared the results of ROA, ROS, ROI and ATO in different periods of ERP pre-implementation (t-3 to t-1) and Post implementation (t+1 to t+3) for 3 years' time. The study found that return on assets (ROA), return on investment (ROI), and asset turnover were significantly better over a 3-year period for adopters, as compared to non-adopters.

Velcu (2005) compared the quality of ERP system with business values in less successful ERP users and successful ERP users. The findings revealed that the quality of an ERP System does not change the business value of the firm.

Nikolaou& Bhattacharya (2006) investigated the impact of Post-ERP implementation changes on organizational long-run financial performance. They found that ERP adopting

firms who were enhancing their existing ERP systems had better financial performance compared to firms not enhancing or upgrading their existing ERP systems.

#### **2.4.2 Local Studies**

Rono (2006) researched on the effectiveness of the internal control system in the management of finances in public universities in Kenya. He concluded that the evaluation of the effectiveness of the internal control systems in the university depended on the category of the departments. The research revealed that the internal control systems in Egerton University were effective due to the well-established departments charged with the responsibility of implementing the internal controls as they carry out the financial processes for example, finance, supplies and personnel departments with their various sections like cash office, salaries, computer, debtors and creditors.

Singla (2008) investigated the impact of ERP system in small and mid-size organizations and compared the performance of ERP adopters and non-adopters. A case study method was employed and two public sector companies where ERP system had been successfully implemented selected for analysis. The research revealed that ERP adopters' performance is higher compared to non-adopters of ERP system.

Karimi (2010) conducted an investigation of the business value of enterprise resource planning systems by firms in Kenya. He studied thirty three organizations in Kenya that were using ERP systems and highlighted that, ERP systems emerged as the core of successful information management, the enterprise backbone of the organizations and it speeds up communication of information throughout the organization.

Nangithia (2010) & Mwatua (2010) defined (ERP) system as a large - scale information system that integrates all business functions into one unified function and that ERP systems have revolutionized the way organization operate their business by providing online, real time information, integration of company business and operation efficiency

Elyas and Salome (2012) researched on the effect of ERP cycle time on supply performance of oil and concluded that ERP systems contribute to supply chain

management particularly in technical areas such as cycle time, standardization, transparency and globalization. They further concluded that ERP integrates both internal and external flows used by the organization and drives the flow of information between all internal business functions while managing connections to outside stakeholders. They further concluded that for firms to update staff payments within shortest time possible, enhance faster transaction between suppliers and the firm, easily retrace complaints of irregular products and improve cash management there was a need to implement the ERP system.

Njihia and Mwirigi (2014) researched on the effects of ERP systems on a firm's performance and surveyed commercial banks in Kenya. They found that financial resource availability, organizational complexities, employee's perceptions, regulatory requirements, and having top management support all affects the effective implementation of an ERP system which will in turn affect the firm's performance.

## **2.5 Summary of Literature Review**

The usage of Enterprise resource planning in organizations has in the recent past risen due to the ever changing business environment. In response to the change in the business environment, commercial state corporations in Kenya have not been left out in the adoption and implementation of Enterprise resource planning systems.

Many studies have been conducted to establish the effect of ERP on business performance and the findings have shown that there is a close link between ERP and business performance. Financial theory suggests that managers should make investment decisions that maximize the value of the firm. Innovative IT investments increase firm value (Santos, Peffers, & Mauer, 1993).

Companies that focus on benefiting customers produce sustained superior financial performance by engendering strategic focus, investment in people, and creative capability. After successful ERP implementation company can reduce the staff and ultimately reduce the operating cost of staff salaries (Springett, 2004). Wayhan & Werner

(2000) concluded that workforce reductions significantly improved subsequent financial performance, particularly in the short term. In comparing successful ERP adopters and non-successful ERP adopters, Velcu, (2005) concluded that successful ERP adopters have significant higher efficiency benefits in terms of asset turnover and capital turnover than the less successful ERP adopter.

In most organizations, a good financial performance is a key driver. It is a subjective measure for assessing how well an organization performs its daily activities and operations and how it is able to generate revenues. It is an indicator of the general financial health of the organization over a given period of time. The relationship between enterprise resource planning and financial performance of commercial state corporations in Kenya is therefore important so as to be able to evaluate the relationship between the two.

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Introduction**

This chapter presents the research methodologies adopted for the research. Specifically, the chapter discusses the range of methods used by the researcher for the research, research design, population, and research methods used to obtain and analyze data.

### **3.2 Research Design**

A research design encompasses the methodology and procedures employed to conduct scientific research (Cooper and Schindler, 2003). This type of research methodology was employed since it describes what exists and may help to uncover new facts and meanings. The advantage of this method is that it uses both qualitative and quantitative data to find solutions to what is being studied (Cooper and Schindler, 2003).

### **3.3 Population**

Population is defined as the total collection of elements about which the researcher wishes to make some inferences. Target population is defined as the members of a real or hypothetical set of people, events or objects to which the researcher wishes to generalize the results of the research (Cooper and Schindler, 2006). The population of this study comprised all commercial state corporations in Kenya. According to (Report of the Presidential Taskforce on Parastatal Reforms, 2013), there were thirty four (34) commercial state corporations in Kenya as shown in Appendix III. Since the population was small the researcher used the census approach.

### **3.4 Data Collection**

Data collection comprises of two types: the primary data and the secondary data (Scheurich, 2007). Primary data enhances reliability since it is collected by the investigator conducting the research. According to Scheurich (2007) secondary data is that data which the author has not been responsible for gathering 'first-hand'. It therefore

includes all the data gathered by someone else and presented in a variety of forms, such as journal articles, reports, archive materials, companies annual reports, newspapers and magazines, conference papers, internet and books. Primary data is any data which the author has obtained 'first-hand' from its original source, Scheurich, (2007). For this study, primary data was collected through a data collection form. The form was distributed to persons in charge of ICT department in the 34 corporations.

For this research, secondary data was obtained from the financial statements of commercial state corporations, 3 years pre and 3 years post implementation of enterprise resource planning. Time lag was deemed necessary for capturing the performance improvements from information technology (Brynjolfsson, 1993). However, while a longer time horizon after implementation analysis is preferred (Knorr, 1999; Wah, 2000), no 4-year or 5-year post implementation financial data was found readily available. Hence, the research period for this research was 3 years pre and 3 years post implementation of enterprise resource planning i.e. between years 2009 to 2014.

### **3.5 .Data Analysis**

According to Cooper and Schindler (2006) data analysis involves reducing the data into summaries. Descriptive analysis was used to analyze the primary data of quantitative nature on the data collection form. Descriptive statistics such as frequencies and percentages and augmented with measures of central tendency (mean) were employed. Additionally, return on assets ratio, asset turn over, current ratio and debt ratios were used to determine pre and post-implementation financial performance.

Means for each recorded ratio were calculated to obtain the pre and post-implementation means. A sample paired t-test was performed on the calculated means at a 95% confidence level and at 19df to determine whether there was a significant difference between the means of the two periods for each ratio.

### 3.5.1 Operationalization of Variables

VARIABLE	MEASURE	FORMULA
Financial Performance	Profitability	Return on Assets = Net Income /Total Assets
	Turn-over/Asset utilization	Asset Turn-Over=Sales Revenue/Total Assets
	Liquidity Ratio	Current Ratio= Current Assets/Current Liabilities
	Solvency Ratio	Debt Ratio=Total Liabilities /Total Assets

Source: Author (2015)

### 3.5 2 Conceptual Model

The independent variable (X) for this study is financial performance and the dependent variable(Y) is enterprise resource planning .The relationship between the dependent variable and the independent variable was expressed using the function below;

$$Y=f(x_1)\dots\dots\dots (1)$$

Where; Y is financial performance as a function of X<sub>1</sub>, Enterprise Resource Planning

### 3.5.3 Test of Significance

The research hypothesis  $H_1$  was: Enterprise resource planning improves the financial performance of commercial state corporations. The Null hypothesis  $H_0$  was: Enterprise resource planning does not improve the financial performance of commercial state corporations. The statistical significance of the relationships between the dependent and the independent variables was measured at a confidence interval of 95 % and at 19df.

## CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSIONS.

### 4.1 Introduction

The study sought to find the relationship between enterprise resource planning and financial performance of commercial state corporations in Kenya. This chapter presents the findings, the interpretation and discussion of the study findings.

### 4.2 Response Rate

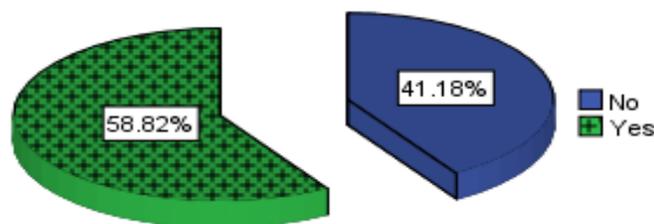
The study population comprised of 34 Kenyan Commercial State Corporations. 20 of the commercial state corporations responded out of the 34 that constituted the population, giving a response rate of 58.82%. According to Mugenda and Mugenda (2003) a 50% response rate is adequate, 60% good and above 70% rated very good. This also concurs with Kothari (2004) assertion that a response rate of 50% is adequate, while a response rate greater than 70% is very good. This implies that based on these assertions; the response rate in this case of 58.82% is adequate.

### 4.3 Background Information of the Commercial State Corporations

#### 4.3.1 Employment of ERP by the Commercial State Corporations

The study sought to find out whether the corporations under study employed ERP. From the findings summarized in Figure 4.1, a majority (58.82%) of the respondents said that the corporations they worked in employed ERP, while 41.18% said they did not.

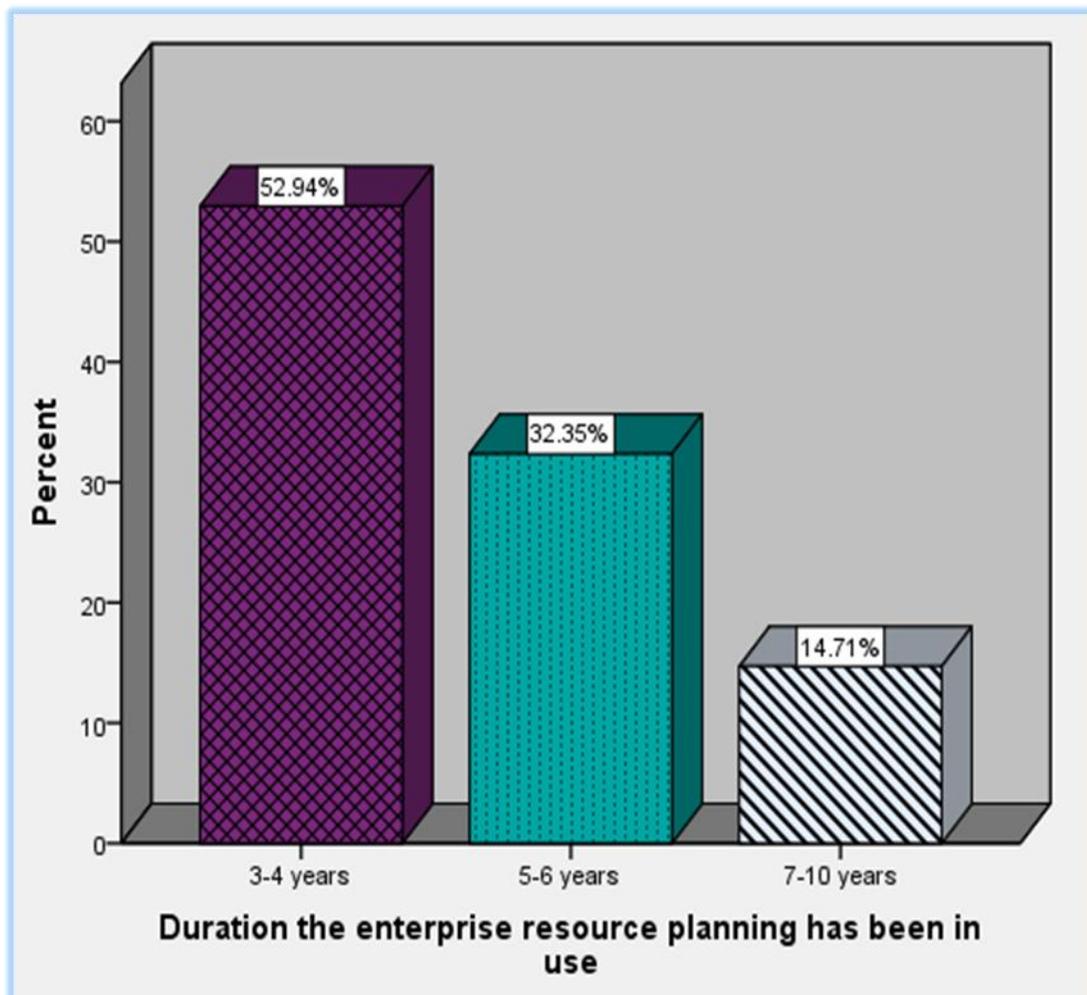
**Figure 4.1: Employment of ERP by the Commercial State Corporations**



### 4.3.2 Duration of ERP Use

The researcher sought to establish the duration of ERP use by each of the corporations. From the findings summarized in Figure 4.2, 52.94% said that the ERP System had been in use in their organization for duration of 3 to 4 years, 32.35% said it had been in use for 5 to 6 years and 14.71% said it had been in use for 7 to 10 years in their corporations.

**Figure 4.2: Duration That ERP Had Been In Use in the Different Corporations**



### 4.3.3 Version of Enterprise Resource Planning System in Use by the Different Organizations

The study sought to find out the versions of ERP Systems that the different corporations employed. The findings summarized in Table 4.1 below show that, a majority (40.0%) of the organizations were using ACCPAC version of the ERP System.

**Table 4.1: Version of ERP System Used by Different Organizations**

Version of ERP	Frequency	Percentage	Cumulative (%)
SERA BLUE Version	2	10.0	10.0
Sypro or Navision	1	10.0	20.0
SAP	3	15.0	35.0
ACCPAC	8	40.0	75.0
Stock System	2	10.0	85.0
Micro Soft Dynamics	1	5.0	90.0
AX 2012			
Core Banking System	1	5.0	95.0
Others	1	5.0	100.0
<b>Totals</b>	<b>20</b>	<b>100.0</b>	

## 4.4 Enterprise Resource Planning and Financial Performance

The study sought to establish the relationship between enterprise resource planning and financial performance of commercial state corporations in Kenya. The findings of the study are presented and discussed under this section.

### 4.4.1 Enterprise Resource Planning and Profitability

The study sought to establish the effect of ERP on the profitability of the state

corporations. From the findings in Table 4.2 below, the mean is found to have increased from 1.47 (3 Years Average Before implementation of ERP) to 2.0 (Post Implementation).

Therefore, ERP System can be said to have had a hand in the increment in profitability ratio of state corporations understudy. These findings back those of Nikolaou and Bhattacharya (2006) who investigated the impact of Post-ERP implementation changes on organizational long-run financial performance. They found that ERP adopting firms who were enhancing their existing ERP systems had better financial performance compared to firms not enhancing or upgrading their existing ERP systems.

**Table 4.2: Enterprise Resource Planning and Profitability**

<b>State Corporation</b>	<b>3 Years Averages Before</b>	<b>3 Years Averages After</b>	<b>Difference</b>	<b>Percentage Change</b>
Kenya Meat Commission	1.43204	0.96983	(0.46221)	(32.2763)
Muhoroni Sugar Company	8.57872	7.11657	(1.46215)	(17.0439)
Chemilil Sugar Company	0.99472	1.00531	0.01059	1.064621
Nzoia Sugar Company Ltd.	0.55848	1.79278	1.2343	221.0106
Simlaw Seeds Kenya	1.2594	1.32403	0.06463	5.131809
Kenya National Trading Corporation	0.70556	1.4173	0.71174	100.8759
Golf Hotel Kakamega	0.80044	1.24931	0.44887	56.07791
Kabarnet Hotel Ltd	0.7259	1.37759	0.65169	89.77683
Jomo Kenyatta Foundation	0.47207	2.11832	1.64625	348.7301
Kenya Literature Bureau	0.47182	2.11945	1.64763	349.2073

Rivatex (East Africa) Ltd.	0.53879	1.85602	1.31723	244.4793
University of Nairobi Enterprises Ltd.	0.9762	1.02438	0.04818	4.935464
University of Nairobi Press(UONP)	1.02723	2.97349	1.94626	189.4668
Jomo Kenyatta University Enterprises Ltd.	0.89845	1.11303	0.21458	23.88335
Development Bank of Kenya Ltd.	0.79438	1.25884	0.46446	58.46824
New Kenya Co-operative creameries	4.42099	2.22619	(2.1948)	(49.645)
National Housing Corporation	0.61032	1.63849	1.02817	168.4641
Consolidated Bank of Kenya	1.33879	2.95166	1.61287	120.4722
Kenya National Assurance Co.(2001)Ltd.	1.69266	3.59079	1.89813	112.1389
Kenya Reinsurance Corporation Ltd.	1.03631	0.96496	(0.07135)	(6.88501)
<b>Mean</b>	<b>1.466664</b>	<b>2.004417</b>		

#### 4.4.1.1 Checking For Outliers

One of the requirements of T-test is that, the data should be free of outliers. The researcher conducted an analysis to establish if the differenced values had presence of outliers. A box plot was generated from the data and was presented in Figure 4.3. From the figure, there was no observed presence of outliers in profitability measure.

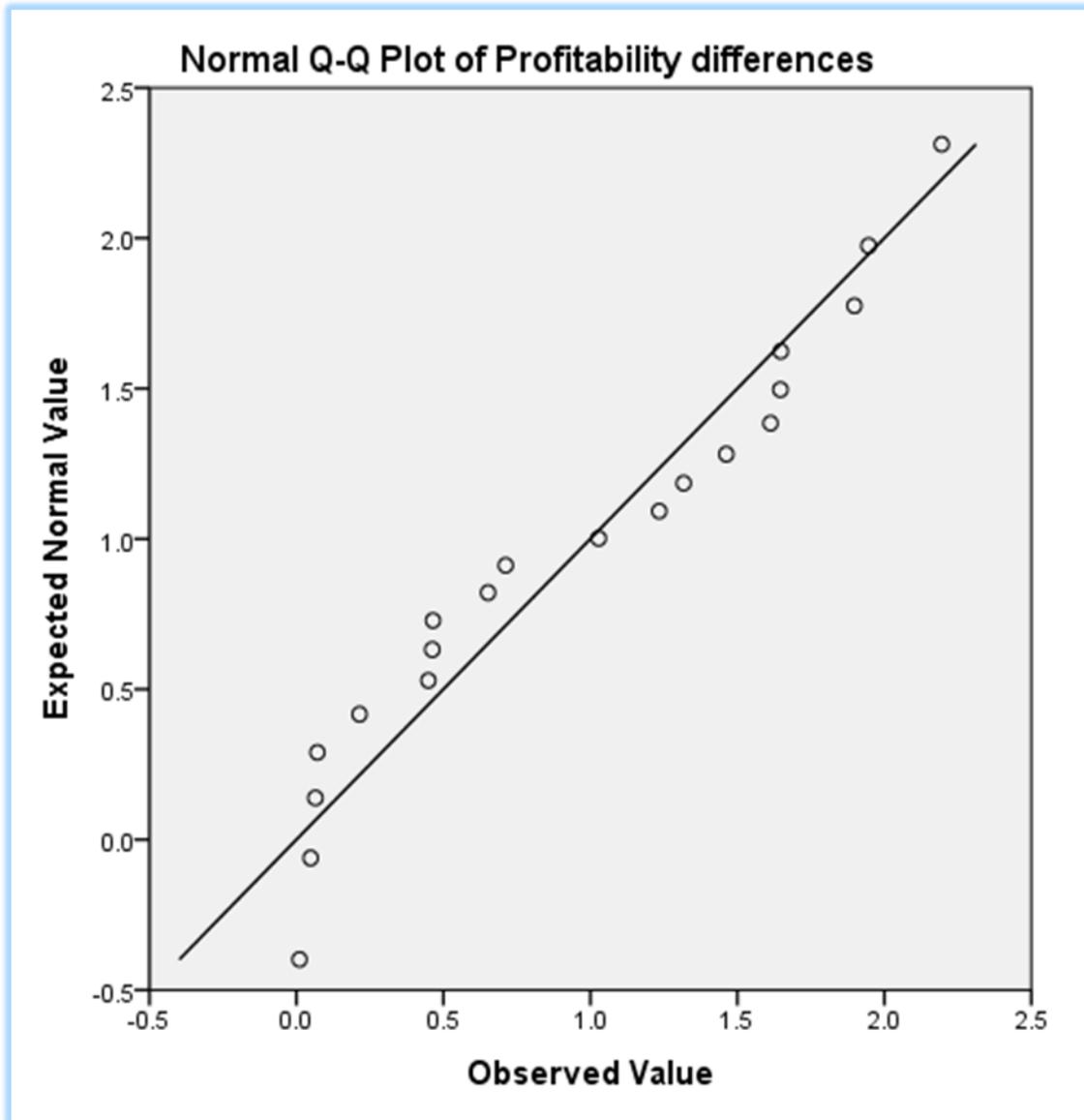
**Figure 4.3: Checking For Outliers in Profitability Measure**



#### **4.4.1.2 Normality Test**

Before carrying out a T-Test, it is usually necessary to carry out a normality check on the data to be analyzed. Therefore, the researcher carried out a normal Q-Q Plot to find out if the data on profitability measure was normally distributed. From the findings in Figure 4.4, most of the dots fell within or near the line of best fit and therefore, the dependent variable data was considered to be normally distributed.

**Figure 4.4: Checking for Normality in Profitability Measure**



#### **4.4.1.3 Paired Sample T-Test of Profitability**

The researcher carried out a one sample t-test on the differenced values of profitability data. The findings were summarized in Table 4.3. From the table, the t-value ( $t = 5.899$ ), at 19df was found to be highly significant since  $p\text{-value} < .05$  (Sig. = .000). Therefore, the study confirmed that ERP had a statistically significant positive influence on the

profitability ratio of state corporations. Also, the null hypothesis that enterprise resource planning does not significantly improve the financial performance (with profitability ratio as a measure) of commercial state corporations was rejected (p-value <.05) and instead the alternative hypothesis was accepted.

**Table 4.3: Paired Sample T-Test of ERP and Profitability**

	One-Sample Test					
	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
Lower					Upper	
Profitability differences	5.899	19	.000	.956804500	.61730306	1.29630594

#### **4.4.2 Enterprise Resource Planning and Turn-over/Asset utilization**

The study sought to find the effect of ERP on Turn-over/Asset utilization of the commercial state corporations. As per the findings as shown in Table 4.4, the mean is found to have increased from 0.12 (3 years average before implementation of the ERP System) to 0.26 (Post implementation). Therefore, ERP can be said to have led to an increment in Turn-over/Asset utilization ratio. The findings confirm findings of Hunton, Lippincott, and Reck (2003) that compared the financial performance of 63 ERP adopters and 60 Non-Adopters. The study found that return on assets (ROA), return on investment (ROI), and asset turnover were significantly better over a 3-year period for adopters, as compared to non-adopters. Also, in comparing successful ERP adaptors and non-successful ERP adaptors, Velcu (2005) concluded that successful ERP adopters have significant higher efficiency benefits in terms of asset turnover and capital turnover than the less successful ERP adopters.

**Table 4.4: Enterprise Resource Planning and Turn-over/Asset Utilization**

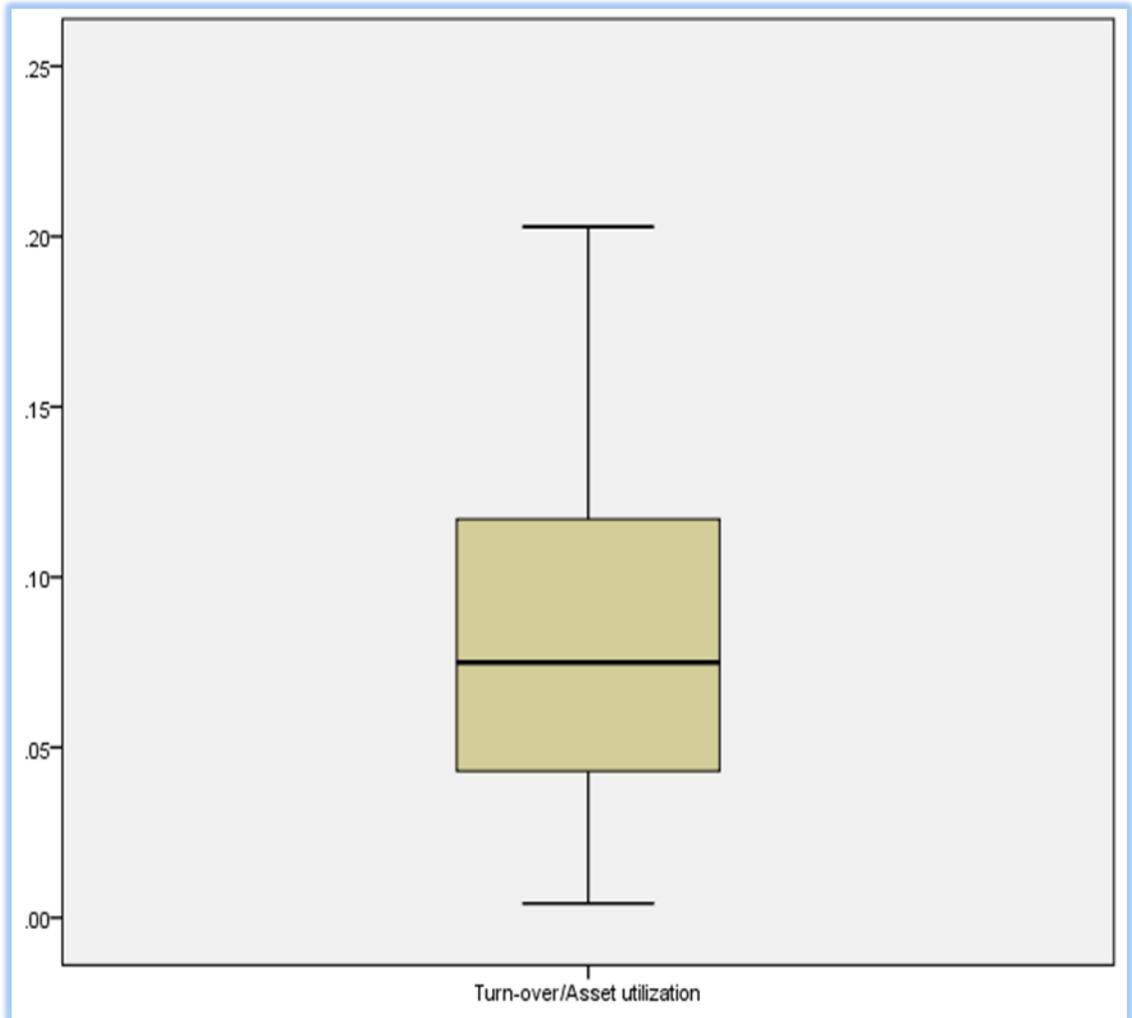
<b>State Corporation</b>	<b>3 Years Averages Before</b>	<b>3 Years Averages After</b>	<b>Difference</b>	<b>Percentage Change</b>
Kenya Meat Commission	0.024215	0.037403	0.013188	54.46211
Muhoroni Sugar Company	0.039552	0.027559	(0.01199)	(30.3221)
Chemilil Sugar Company	0.130518	0.232108	0.10159	77.83601
Nzoia Sugar Company Ltd.	0.056124	0.227649	0.171525	305.6179
Simlaw Seeds Kenya	0.059146	0.163706	0.10456	176.7829
Kenya National Trading Corporation	0.470636	0.587613	0.116977	24.85509
Golf Hotel Kakamega	0.34438	0.25154	(0.09284)	(26.9586)
Kabarnet Hotel Ltd	0.250377	0.36749	0.117113	46.77466
Jomo Kenyatta Foundation	0.240308	0.42305	0.182742	76.04491
Kenya Literature Bureau	2.640015	2.692632	0.052617	1.95411
Rivatex (East Africa) Ltd.	0.203275	0.000417	(0.20286)	(99.7949)
University of Nairobi Enterprises Ltd.	0.084185	0.009331	(0.07485)	(88.9161)
University of Nairobi Press(UONP)	0.043744	0.000277	(0.04347)	(99.3668)
Jomo Kenyatta University Enterprises Ltd.	0.055962	0.110024	0.054062	96.60484

Development Bank of Kenya Ltd.	0.144918	0.219868	0.07495	51.7189
New Kenya Co-operative creameries	0.137559	0.094882	(0.04268)	(31.0245)
National Housing Corporation	0.109282	0.227239	0.117957	107.9382
Consolidated Bank of Kenya	0.06695	0.036257	(0.03069)	(45.8447)
Kenya National Assurance Co.(2001)Ltd.	0.03816	0.042364	0.004204	11.01677
Kenya Reinsurance Corporation Ltd.	0.048848	0.000117	(0.04873)	(99.7605)
<b>Mean</b>	<b>0.129254</b>	<b>0.262422</b>		

#### 4.4.2.1 Test for Outliers

The researcher conducted an analysis to establish if the differenced values had outliers. A box plot was generated from the data and was presented in Figure 4.5. The figure shows that, there was no observed presence of outliers in Turn-over/Asset Utilization measure.

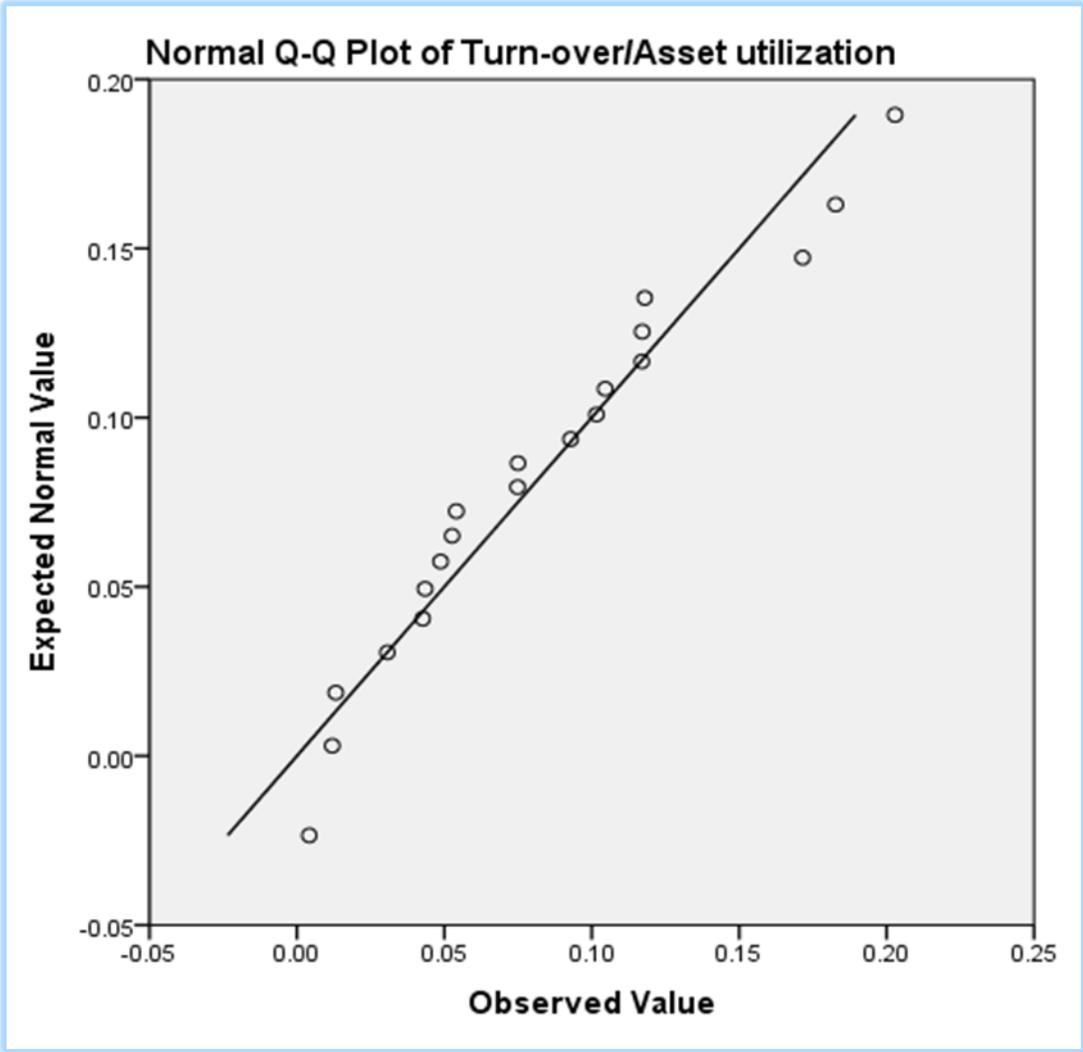
**Figure 4.5: Checking for Outliers in Turn-over/Asset Utilization**



#### **4.4.2.2 Normality Test**

The researchers carried out a normal Q-Q Plot to establish if the data on turn-over/asset utilization ratio measure was normally distributed. The findings in Figure 4.6 show that, most of the dots fell within or near the line of best fit and therefore, the Turn-over/Asset Utilization data was considered to be normally distributed.

**Figure 4.6: Checking for normality in Turn-over/Asset Utilization data**



**4.4.2.3 One Sample T-Test for Asset Utilization**

The researcher carried out a one sample t-test on the differenced values of turn-over/asset utilization data. The findings were summarized in Table 4.5. From the table, the t-value ( $t = 6.511$ ), at 19df was found to be highly significant since  $p\text{-value} < .05$  (Sig. = .000). Therefore, the study confirmed that ERP had a statistically significant positive influence on the turn-over/asset utilization ratio of state corporations. The null hypothesis that enterprise resource planning does not significantly improve the financial performance (with turn-over/asset utilization ratio as a measure) of commercial state corporations was

therefore, rejected (p-value < .05) and instead the alternative hypothesis accepted.

**Table 4.5: Paired Sample T-Test of ERP and Turn-over/Asset Utilization**

	One-Sample Test					
	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
Lower					Upper	
Turn-over/Asset utilization	6.511	19	.000	.082979750	.05630645	.10965305

#### 4.4.3 ERP and Liquidity Ratio

The study sought to establish the effect ERP had on liquidity ratio of state corporations. The findings in Table 4.6 show that the mean increased from 1.41 (3 years average before implementation of the ERP System) to 1.87 (Post implementation). Therefore, ERP can be said to have had a positive influence on liquidity ratio. In a similar study, Poston et al. (2001) found that, ERP system affect positively on firm's performance in two ways: it reduces the cost by improving efficiency of business processes in a computerized way and it also enhanced decision making ability by providing accurate information in time.

**Table 4.6: Enterprise Resource Planning and Liquidity Ratio**

State Corporation	3 Years Averages Before	3 Years Averages After	Difference	Percentage Change
Kenya Meat Commission	1.698303	3.13789	1.439587	84.7662
Muhoroni Sugar Company	2.116567	2.04098	(0.07559)	(3.57121)
Chemilil Sugar Company	1.005313	3.03302	2.027707	201.6991

Nzoia Sugar Company Ltd.	1.79278	1.14505	(0.64773)	(36.1299)
Simlaw Seeds Kenya	0.794027	1.69956	0.905533	114.0431
Kenya National Trading Corporation	1.417304	1.20559	(0.21171)	(14.9378)
Golf Hotel Kakamega	1.249311	2.88945	1.640139	131.2835
Kabarnet Hotel Ltd	1.377593	3.03809	1.660497	120.5361
Jomo Kenyatta Foundation	2.118322	2.25049	0.132168	6.239278
Kenya Literature Bureau	2.119448	2.82690	0.707452	33.37907
Rivatex (East Africa) Ltd.	1.856021	1.07075	(0.78527)	(42.3094)
University of Nairobi Enterprises Ltd.	1.024376	2.67542	1.651044	161.1756
University of Nairobi Press(UONP)	0.973489	0.00959	(0.9639)	(99.0149)
Jomo Kenyatta University Enterprises Ltd.	1.113034	1.26516	0.152126	13.66769
Development Bank of Kenya Ltd.	1.258837	1.29140	0.032563	2.586753
New Kenya Co-operative creameries	0.226194	1.94801	1.721816	761.2121
National Housing Corporation	1.63849	1.92578	0.28729	17.53383
Consolidated Bank of Kenya	2.951663	1.66653	(1.28513)	(43.5393)
Kenya National Assurance Co.(2001)Ltd.	0.590787	1.26952	0.678733	114.8862
Kenya Reinsurance Corporation Ltd.	0.964958	1.00330	0.038342	3.973437

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Mean

1.414341

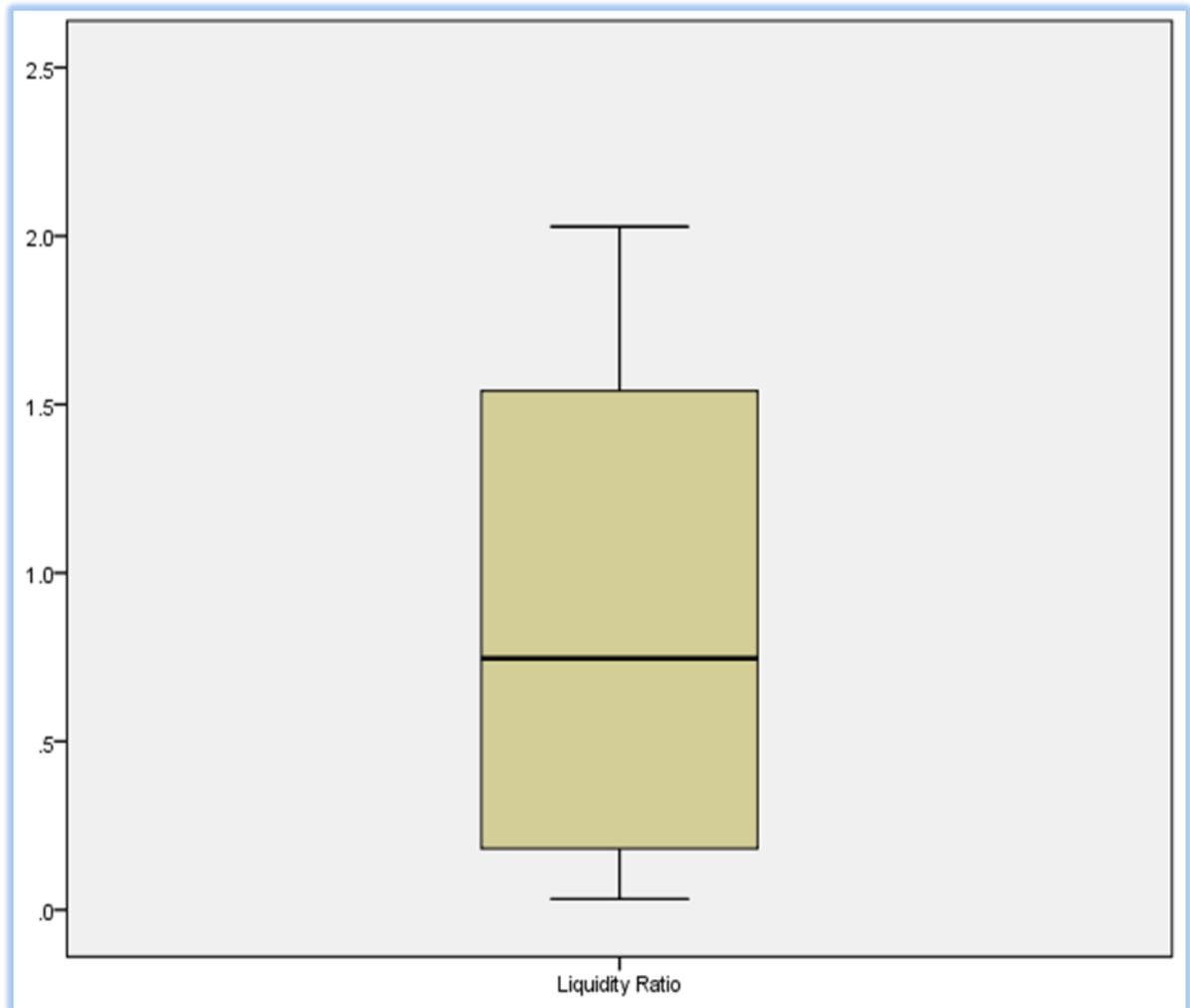
1.869624

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#### 4.4.3.1 Test for Outliers

The study conducted an analysis to find out whether the differenced values contained outliers. A box plot was plotted from the data and was presented in Figure 4.7. From the figure, there were no observed presences of outliers in the liquidity ratio measure.

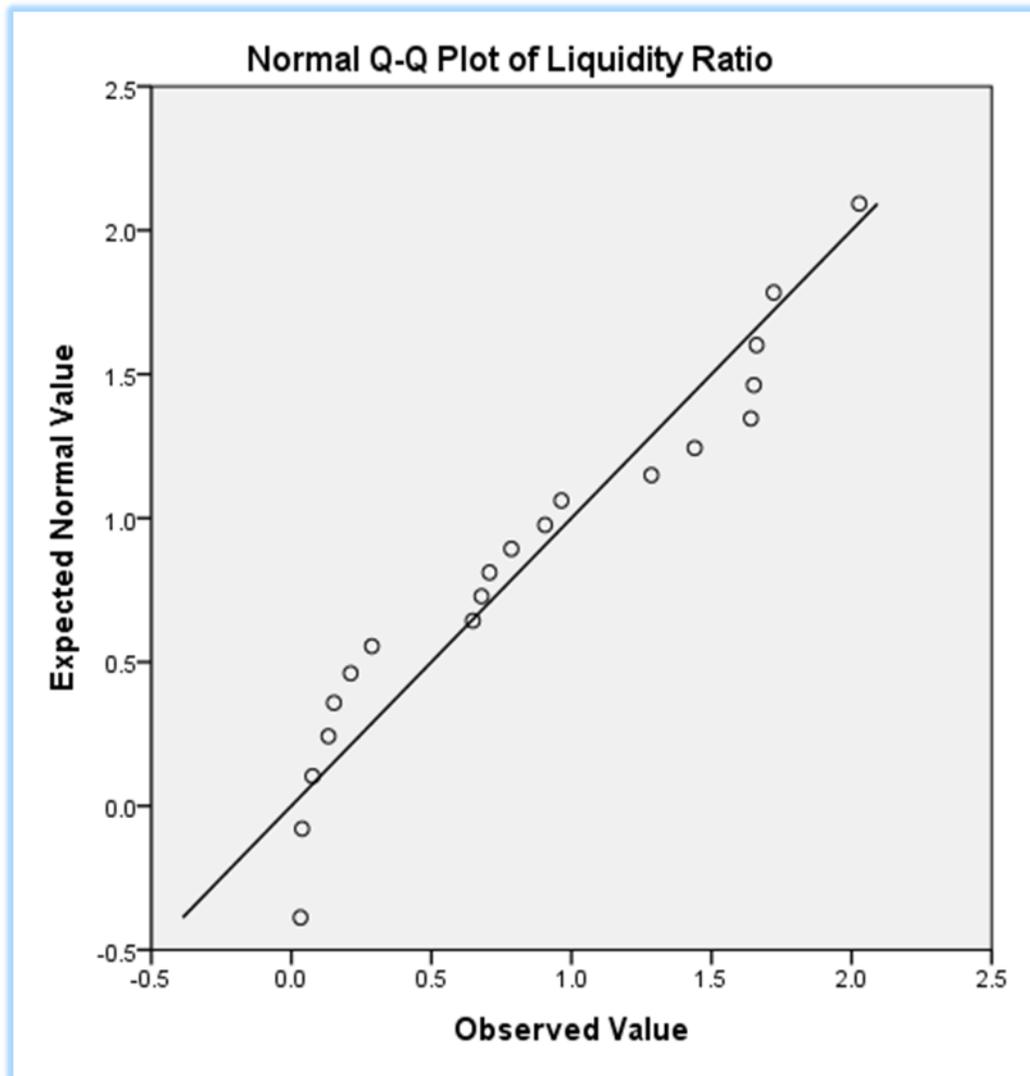
**Figure 4.7: Checking For Outliers in Liquidity Ratio Data**



#### 4.4.3.2 Normality Test

The researchers carried out a normal Q-Q Plot to establish if the data on liquidity ratio measure was normally distributed. The findings in Figure 4.8 show that most of the dots fell within or near the line of best fit and therefore, the liquidity ratio differenced data was considered to be normally distributed.

**Figure 4.8: Checking for Normality in Liquidity Ratio Data**



#### 4.4.3.3 One Sample T-Test for Liquidity

The study carried out a one sample t-test on the differenced values of liquidity ratio data. The findings were summarized in Table 4.7. From the table, the t-value ( $t = 5.742$ ), at 19df was found to be highly significant since  $p\text{-value} < .05$  (Sig. = .000). Therefore, the study confirmed that ERP had a statistically significant positive influence on the liquidity ratio of state corporations. Further, the null hypothesis that enterprise resource planning does not significantly improve the financial performance (with liquidity ratio as a measure) of commercial state corporations was rejected ( $p\text{-value} < .05$ ) and instead the alternative hypothesis was accepted.

**Table 4.7: Paired Sample T-Test of ERP and Liquidity Ratio**

	One-Sample Test					
	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
Lower					Upper	
Liquidity Ratio	5.742	19	.000	.852216350	.54157231	1.16286039

#### 4.4.4 Solvency Ratio

The study sought to find the effect of ERP on solvency ratio of state corporations. The findings presented in Table 4.8 indicate that, the mean increased from 0.32 (3 years average before implementation of the ERP System) to 0.39 (Post Implementation). Therefore, ERP had a positive influence on solvency ratio of state corporations understudy. In a similar study, Singla (2008) investigated the impact of ERP system in small and mid-size organizations and compared the performance of ERP adopters and non-adopters. The research revealed that ERP adopters' performance was higher compared to non-adopters of ERP system.

**Table 4.8: Enterprise Resource Planning and Solvency Ratio**

<b>State Corporation</b>	<b>3 Years Averages Before</b>	<b>3 Years Averages After</b>	<b>Difference</b>	<b>Percentage Change</b>
Kenya Meat Commission	0.1793401	0.60071769	0.421378	234.9601
Muhoroni Sugar Company	0.3355208	0.31234348	(0.02318)	(6.90786)
Chemilil Sugar Company	0.0003999	0.33485367	0.334454	83634.35
Nzoia Sugar Company Ltd.	0.4458651	0.04304285	(0.40282)	(90.3462)
Simlaw Seeds Kenya	0.6577312	0.42654842	(0.23118)	(35.1485)
Kenya National Trading Corporation	0.2342124	1.81226944	0.078057	673.7718
Golf Hotel Kakamega	0.1443701	0.13191486	(0.01246)	(8.6273)
Kabarnet Hotel Ltd	0.8427233	0.0066493	(0.03607)	(99.211)
Jomo Kenyatta Foundation	0.4375918	0.2631266	(0.17447)	(39.8694)
Kenya Literature Bureau	0.0007459	1.3563032	.055557	181734.5
Rivatex (East Africa) Ltd.	0.3026306	0.029511	(0.27312)	(90.2485)
University of Nairobi Enterprises Ltd.	0.2459386	0.52821359	0.282275	114.7746
University of Nairobi Press(UONP)	0.6382637	0.21867801	(0.41959)	(65.7386)
Jomo Kenyatta University Enterprises Ltd.	0.5041863	0.15928088	(0.34491)	(68.4083)
Development Bank of Kenya Ltd.	0.0713636	0.21087141	0.139508	195.4888

New Kenya Co-operative creameries	0.0876771	0.26693953	0.179262	204.4575
National Housing Corporation	0.0694812	0.11372348	0.044242	63.67518
Consolidated Bank of Kenya	0.199771	0.17214067	(0.02763)	(82.7819)
Kenya National Assurance Co.(2001)Ltd.	0.0594166	0.31672647	0.25731	433.0606
Kenya Reinsurance Corporation Ltd.	0.2087948	0.58713517	0.37834	181.202
<b>Mean</b>	<b>0.323301</b>	<b>0.394549</b>		

#### 4.4.4.1 Test for outliers

The study conducted an analysis to establish if the differenced values had presence of outliers. A box plot was generated from the data and was presented in Figure 4.9. From the figure, there was no observed presence of outliers in solvency ratio measure.

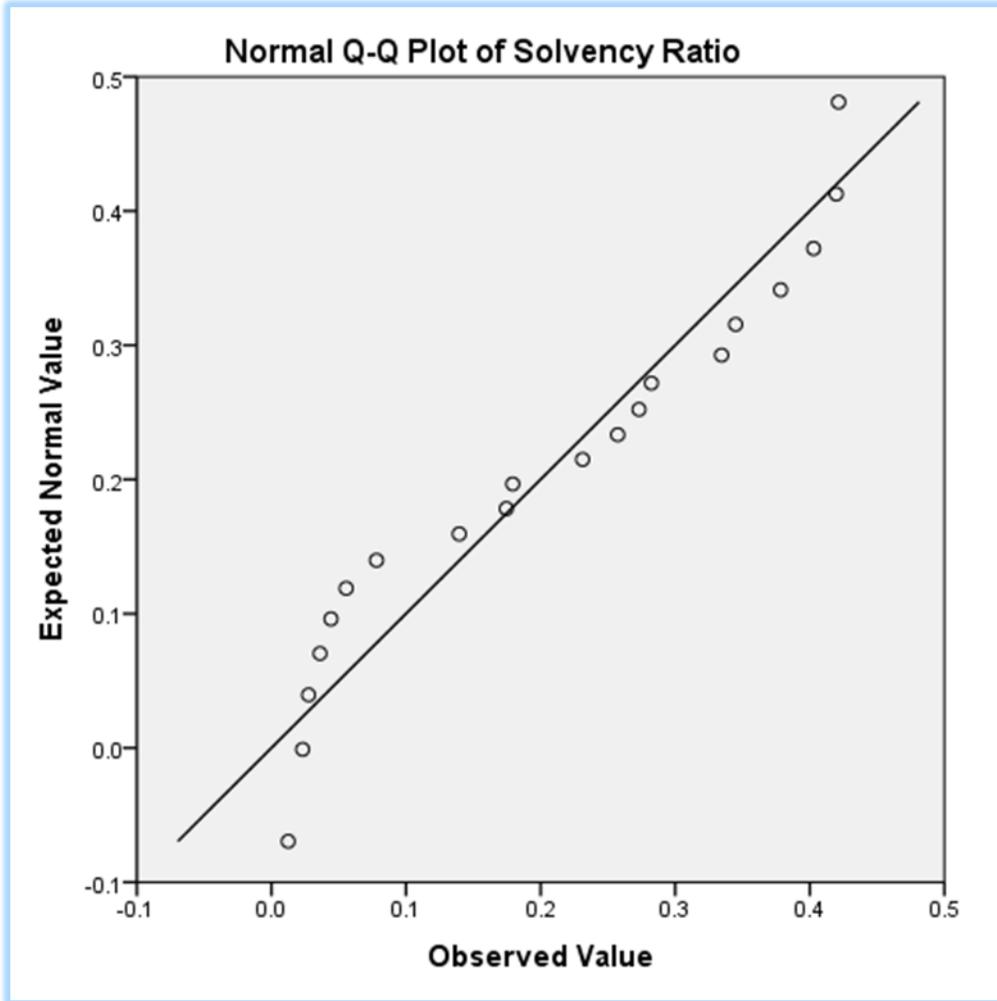
**Figure 4.9: Checking For Outliers in Solvency Ratio Data**



#### **4.4.4.2 Normality Test**

The researcher carried out a normal Q-Q Plot to establish if the data on Liquidity ratio measure was normally distributed. The findings in Figure 4.10 show that most of the dots fell within or near the line of best fit and therefore, the liquidity ratio differenced data was considered to be normally distributed.

**Figure 4.10: Checking for Normality in Solvency Ratio Data**



#### **4.4.4.3 One Sample T-Test for the Differenced Values of Solvency Ratio**

The researcher carried out a one sample t-test on the differenced values of solvency ratio data. The findings were summarized in Table 4.9. From the table, the t-value ( $t = 6.245$ ), at 19df was found to be highly significant since  $p\text{-value} < .05$  (Sig. = .000). Therefore, the study confirmed that ERP had a statistically significant positive influence on the solvency ratio of state corporations. Further, the null hypothesis that enterprise resource planning does not significantly improve the financial performance (with solvency ratio as a measure) of commercial state corporations was rejected ( $p\text{-value} < .05$ ) and instead the

alternative hypothesis was accepted.

**Table 4.9: Paired Sample T-Test of ERP and Solvency Ratio**

<b>One-Sample Test</b>						
<b>Test Value = 0</b>						
	<b>t</b>	<b>df</b>	<b>Sig. (2-tailed)</b>	<b>Mean Difference</b>	<b>95% Confidence Interval of the Difference</b>	
					<b>Lower</b>	<b>Upper</b>
Solvency Ratio	6.245	19	.000	.205790650	.13681404	.27476726

## **CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

### **5.1 Introduction**

The study sought to find the relationship between enterprise resource planning and financial performance of commercial state corporations in Kenya. This chapter presents the summary of findings, conclusions and recommendations of the study.

### **5.2 Summary of the Findings**

The study found out that a majority of commercial state corporations under study employed ERP System with a majority having used it for duration of between 3 and 4 years.

The study sought to establish the effect of ERP on profitability of the state corporations. The findings revealed that, the mean had increased from 1.39 (3 years average before implementation of the ERP System) to 1.76 (Post implementation). The researcher carried out a one sample t-test on the differenced values of profitability data. The findings confirmed that ERP had a statistically significant positive influence on the profitability ratio of state corporations. Also, the null hypothesis that enterprise resource planning does not significantly improve the financial performance (with profitability ratio as a measure) of commercial state corporations was rejected ( $p\text{-value} < .05$ ) and instead the alternative hypothesis was accepted.

The study also sought to find the effect of ERP on turn-over/asset utilization of the state corporations. The findings showed that, the mean had increased from 0.12 (3 years average before implementation of ERP) to 0.26 (Post implementation) .The researcher further carried out a one sample t-test on the differenced values of turn-over/asset

utilization data. The findings therefore, confirmed that ERP had a statistically significant positive influence on the turn-over/asset utilization ratio of state corporations. Also, the null hypothesis that enterprise resource planning does not significantly improve the financial performance (with turn-over/asset utilization ratio as a measure) of commercial state corporations was rejected (p-value  $<.05$ ) and instead the alternative hypothesis was accepted. The study sought to establish the effect that ERP had on liquidity ratio of state corporations. The mean was found to have increased from 1.41 (3 Years Average Before implementation of ERP) to 1.87 (Post Implementation) Therefore, ERP can be said to have positively influenced liquidity ratio. The study carried out a one sample t-test on the differenced values of liquidity ratio data. From the findings, the study established that, ERP had a statistically significant positive influence on the liquidity ratio of state corporations. Further, the null hypothesis that enterprise resource planning does not significantly improve the financial performance (with liquidity ratio as a measure) of commercial state corporations was rejected (p-value  $<.05$ ) and instead the alternative hypothesis was accepted.

The study sought to find the effect of ERP on solvency ratio of state corporations. The findings indicated that, the mean increased from 0.32 (3 years average before implementation of ERP) to 0.39 (Post implementation). Therefore, ERP had a positive influence on solvency ratio of state corporations understudy. Further, the researcher carried out a one sample t-test on the differenced values of solvency ratio data. The findings confirmed that ERP had a statistically significant positive influence on the solvency ratio of state corporations. In addition, the null hypothesis that enterprise resource planning does not significantly improve the financial performance (with solvency ratio as a measure) of commercial state corporations was rejected (p-value  $<.05$ ) and instead the alternative hypothesis was accepted.

### **5.3 Conclusions of the Study**

The study sought to establish the effect of ERP on profitability of the state corporations. From the findings, the researcher concluded that ERP had a statistically significant

positive influence on profitability ratio of state corporations understudy. These findings confirm those of Nikolaou and Bhattacharya (2006) who found that ERP adopting firms who were enhancing their existing ERP systems had better financial performance compared to firms not enhancing or upgrading their existing ERP systems.

The study sought to find the effect of ERP on turn-over/asset utilization of the state corporations. The findings lead the researcher to conclude that, ERP affects turn-over/asset utilization ratio positively. The findings confirm findings of Hunton, Lippincott, and Reck (2003) who found that return on assets (ROA), return on investment (ROI), and asset turnover were significantly better over a 3-year period for adopters, as compared to non-adopters. Also, Velcu (2005) concluded that successful ERP adopters have significant higher efficiency benefits in terms of asset turnover and capital turnover than the less successful ERP adopters.

The study sought to establish the effect that ERP had on liquidity ratio of state corporations. The researcher concluded that, ERP positively influenced liquidity ratio. In a similar study, Poston et al. (2001) found that, ERP affects positively a firm's performance in two ways: it reduces the cost by improving efficiency of business processes in a computerized way and it enhanced decision making ability by providing accurate information in time.

The study sought to find the effect of ERP on solvency ratio of state corporations. The findings led the researcher to the conclusion that, ERP had a positive influence on solvency ratio of state corporations understudy. In a similar study, Singla (2008) who established that, ERP adopters' performance was higher compared to non-adopters of ERP system.

#### **5.4 Recommendations of the Study**

The study sought to find the relationship between enterprise resource planning and financial performance of commercial state corporations in Kenya. The study therefore,

recommends that all commercial state corporations in Kenya should adopt ERP so as to improve their efficiency and improve their financial performance. Based on the findings of this study, the policy makers should determine the need for an ERP System as this will guide the successful adoption and implementation of the system.

### **5.5 Limitations of the Study.**

This study had a few limitations. First, the population under study was large considering the time limit of carrying out the research and the fact that some of the commercial state corporations were in different geographical locations.

Secondly, obtaining financial information of these commercial state corporations was a challenge as most of them were reluctant to provide the information citing confidentiality and the fact that this information was not readily available.

### **5.6 Recommendations For Future Study**

This study sought to establish the relationship that existed between enterprise resource planning and financial performance of commercial state corporations in Kenya. A similar study can be carried out using a different case study. A model can also be derived and tested to evaluate the relationship between enterprise resource planning and financial performance.

This study focused on the effect of ERP on financial performance. A similar study can be done on another aspect of the business/firm/corporation or even the overall performance of the organization.

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## APPENDICES

### APPENDIX I: DATA COLLECTION FORM

Dear Respondent: My name is Rebecca Anyota. I am a finalist Master of Business Administration (MBA) student at University of Nairobi. In partial fulfillment of the requirement of this course, I am conducting my academic research entitled ‘The relationship between enterprise resource planning and financial performance of commercial state corporations in Kenya’ . The University has permitted me to carry out this research and I will treat all your responses confidentially. Please tick (√) as appropriate.

#### PART ONE: BASIC INFORMATION

1) Name of the corporation.....

#### PART TWO: ENTERPRISE RESOURCE PLANNING IMPLEMENTATION

1) Does your corporation employ any ERP system? Yes[ ] or No [ ]

2) For how long has the enterprise resource planning been in use?

- a) Less than a year [ ]
- b) 1-2 years [ ]
- c) 3-4 years [ ]
- d) 5–6 years [ ]
- e) 7–10 years [ ]
- f) More than 10 years [ ]

3) In what year was the ERP system in your organization implemented?.....

4) Which version of enterprise resource planning system is in use in your organization?

- a) SERA BLUE Version [ ]

- b) Sypro or Navision [ ]
- c) SAP [ ]
- d) ACCPAC [ ]
- e) Stock System [ ]
- f) Micro Soft Dynamics AX 2012 [ ]
- g) Core Banking System [ ]
- h) Others .....

**THANK YOU VERY MUCH FOR YOUR CO-OPERATION**

## **APPENDIX II: INTRODUCTION LETTER**

Rebecca Kwamboka Anyota

MBA Student

P.O. Box 30197

University of Nairobi

School of Business

Nairobi.

3<sup>rd</sup> June, 2015

### **To Whom It May Concern**

#### **Re: Permission to Carry Out a Research in Your Firm**

I am a Post graduate student at the University of Nairobi and in partial fulfillment of a Master's in Business Administration Degree; I intend to carry out a research in your firm. The topic of research is the 'The relationship between enterprise resource planning and financial performance of commercial state corporations in Kenya'.

Your firm has been chosen for the study based on the achievement of the objective of the study .I therefore kindly request your approval of collecting data in the organization through the attached questionnaires which I request your personnel to respond .The research information will be confidential and will only be used for academic purposes.

Thank you in Advance

Rebecca Kwamboka Anyota.

D61/67808/2011

MBA Student

**University of Nairobi**

**APPENDIX III: LIST OF COMMERCIAL STATE CORPORATIONS**

<b>S/No.</b>	<b>STATE CORPORATION</b>	<b>SECTOR</b>
1	Agro-Chemicals and Food Company	Agriculture, Livestock & Fisheries.
2	Kenya Meat Commission	Agriculture, Livestock & Fisheries.
3	Muhoroni Sugar Company	Agriculture, Livestock & Fisheries.
4	Nyayo Tea Zones Development Corporation	Agriculture, Livestock & Fisheries.
5	South Nyanza Sugar Company Ltd	Agriculture, Livestock & Fisheries.
6	Chemilil Sugar Company	Agriculture, Livestock & Fisheries.
7	Nzoia Sugar Company Ltd.	Agriculture, Livestock & Fisheries.
8	Simlaw Seeds Kenya	Agriculture, Livestock & Fisheries.
9	Simlaw Seeds Tanzania	Agriculture, Livestock & Fisheries.
10	Simlaw Seeds Uganda	Agriculture, Livestock & Fisheries.
11	Kenya Safari Lodge and Hotels	East African Affairs, commerce & Tourism
12	Kenya National Trading Corporation	East African Affairs, commerce & Tourism
13	Golf Hotel Kakamega	East African Affairs, commerce & Tourism
14	Kabarnet Hotel Ltd	East African Affairs, commerce & Tourism
15	Mt.Elgon Lodge	East African Affairs, commerce & Tourism
16	Sunset Hotel Kisumu	East African Affairs, commerce & Tourism
17	Jomo Kenyatta Foundation	Education, Science and Technology
18	Kenya Literature Bureau	Education, Science and Technology

19	Rivatex (East Africa) Ltd.	Education, Science and Technology
20	School Equipment Production Unit	Education, Science and Technology
21	University of Nairobi Enterprises Ltd.	Education, Science and Technology
22	University of Nairobi Press(UONP)	Education, Science and Technology
23	Jomo Kenyatta University Enterprises Ltd.	Education, Science and Technology
24	Kenya Wine Agencies Ltd.	Industrialization & Enterprise Development
25	Development Bank of Kenya Ltd.	Industrialization & Enterprise Development
26	KWA Holdings	Industrialization & Enterprise Development
27	New Kenya Co-operative creameries	Industrialization & Enterprise Development
28	Yatta vineyards Ltd.	Industrialization & Enterprise Development
29	National Housing Corporation	Lands, Housing & Urban Development
30	Research development Unit Company Ltd	Lands, Housing & Urban Development
31	Consolidated Bank of Kenya	National Treasury
32	Kenya National Assurance Co.(2001)Ltd.	National Treasury
33	Kenya Reinsurance Corporation Ltd.	National Treasury
34	Kenya National Shipping Line	Transport & Infrastructure

**Source: Report of the Presidential Taskforce on Parastatal Reforms (October, 2013)**